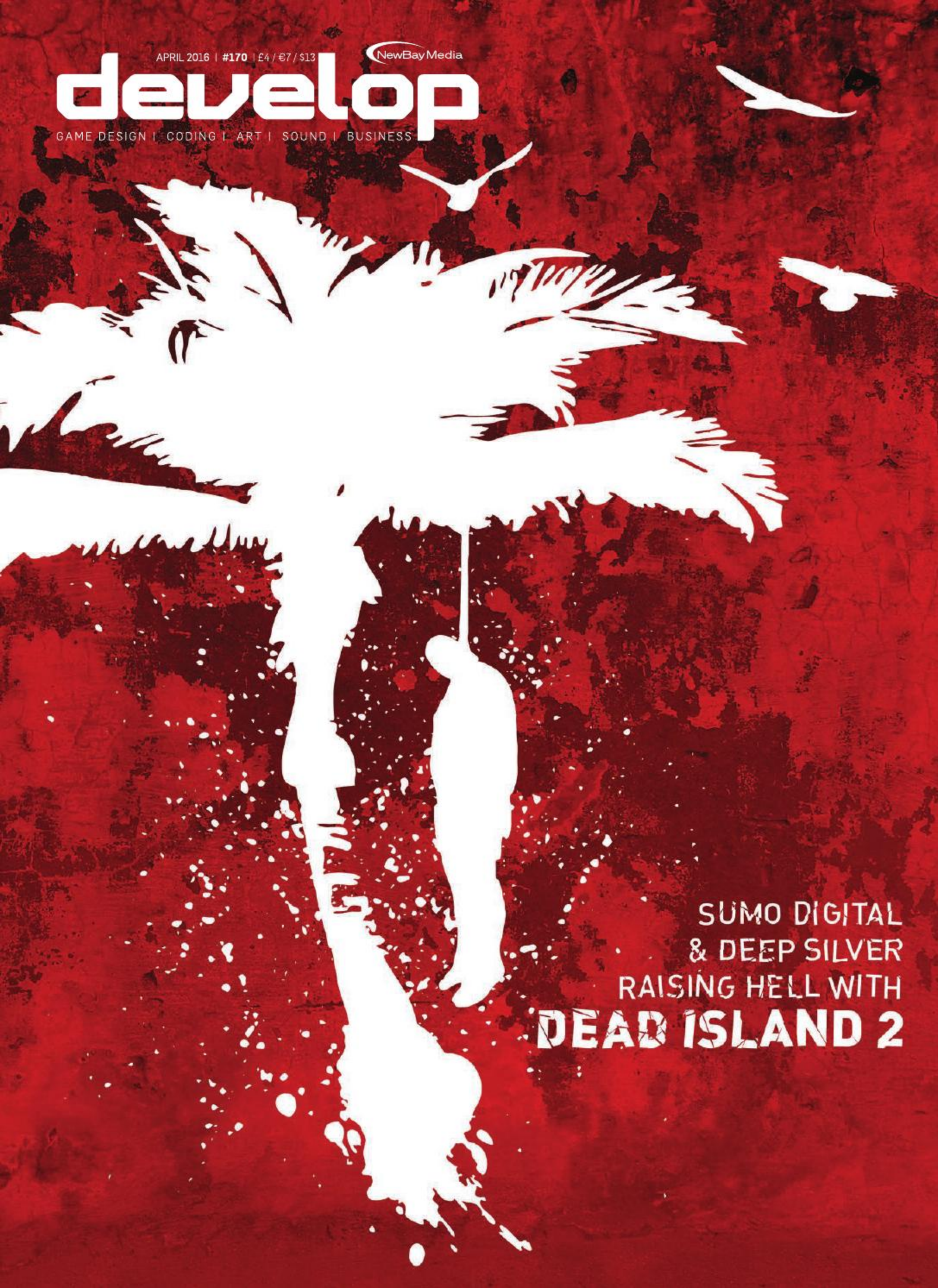
APRIL 2016 | #170 | £4 / €7 / $13

NewBayMedia

develop

GAME DESIGN | CODING | ART | SOUND | BUSINESS



SUMO DIGITAL
& DEEP SILVER
RAISING HELL WITH
DEAD ISLAND 2

QUALITY

13 YEARS

CREATIVITY

50+ GAMES

VERSATILITY

GENRE DEFINING TITLES

RELIABILITY

MULTIPLE AWARD WINNING STUDIO

We are Sumo Digital and it is our mission to make extraordinary games.

For 13 years we have been building the most amazing gaming experiences with the help of some of the **industry's most talented games developers.**

With our steely roots forged in the heart of Sheffield, Sumo Digital has become an established name throughout the industry, always building on our reputation for **quality, creativity, versatility** and **reliability.**

SUMO DIGITAL

develop #170 APRIL 2016

THE MOBILE SPECIAL

11 beta

STEALING THE LIMELIGHT
In the face of overwhelming competition and market saturation, we ask leading mobile studios about how devs can improve their app store presence and ensure their titles are more memorable to consumers

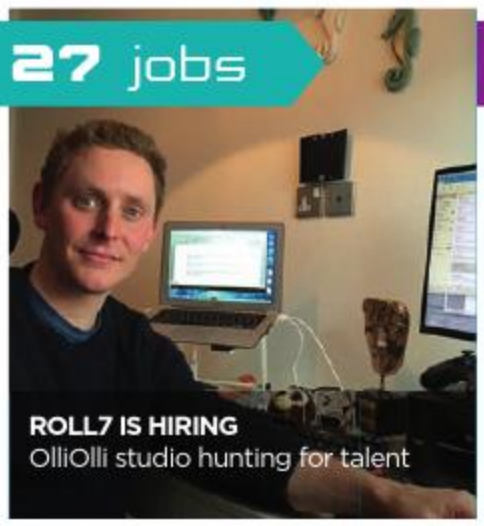
04 alpha

THE FUTURE OF MOBILE
Experts debate the next disruption for smart devices

15 beta

TOUCHING ON ESPORTS
How Vainglory is proving the critics wrong

27 jobs



ROLL7 IS HIRING
OlliOlli studio hunting for talent

31 build

TOP MOBILE TIPS
Essential tools for developers

38 build

TUTORIAL: VOICE COMMANDS
With a little help from Cortana

ALSO • **06** Diary Dates • **08** Opinion • **23** Studio Spotlight • **25** Develop Jobs • **49** Tools Spotlight

CONTACTS

Editor
James Batchelor
jbatchelor@nbmedia.com

Senior Staff Writer
Matthew Jarvis
mjarvis@nbmedia.com

Staff Writer
Marie Dealessandri
mdealessandri@nbmedia.com

Designer
Nikki Hargreaves
nhargreaves@nbmedia.com

Production Executive
James Marinos
jmarinos@nbmedia.com

Content Director
Andrew Wooden
awooden@nbmedia.com

Sales Manager
Jennie Lane
jlane@nbmedia.com

Sales Executive
Charlotte Nangle
cnangle@nbmedia.com

Contributors
John Broomhall, Will Freeman, Simon Oliver, Simon Jackson, Liz Prince

Editorial: 01992 515 303 **Advertising:** 0207 354 6000 **Web:** www.develop-online.net

Follow us on www.facebook.com/developonline www.twitter.com/developonline

Editorial

MAKE MINE MOBILE

I've always thought of myself, first and foremost, as a console gamer. It's how I entered this wonderful hobby, and triple-A releases continue to be among the biggest causes of excitement for me.

Yet if I'm truly honest with myself, I probably spend most of my time playing on mobile. I'm sure the same is true for most of you. And with good reason: there's far more variety on smart devices than on any of the more traditional gaming platforms.

Mobile devs face the toughest challenges: absurd competition and unforgiving business models.

It's a market where indie studios can release quirky titles that defy genres, where art styles vary wildly, and where you can launch a title you believe will keep players engaged for years, not months.

I have the utmost admiration for mobile devs who face the toughest challenges: absurd competition, unforgiving business models, discoverability issues and much more.

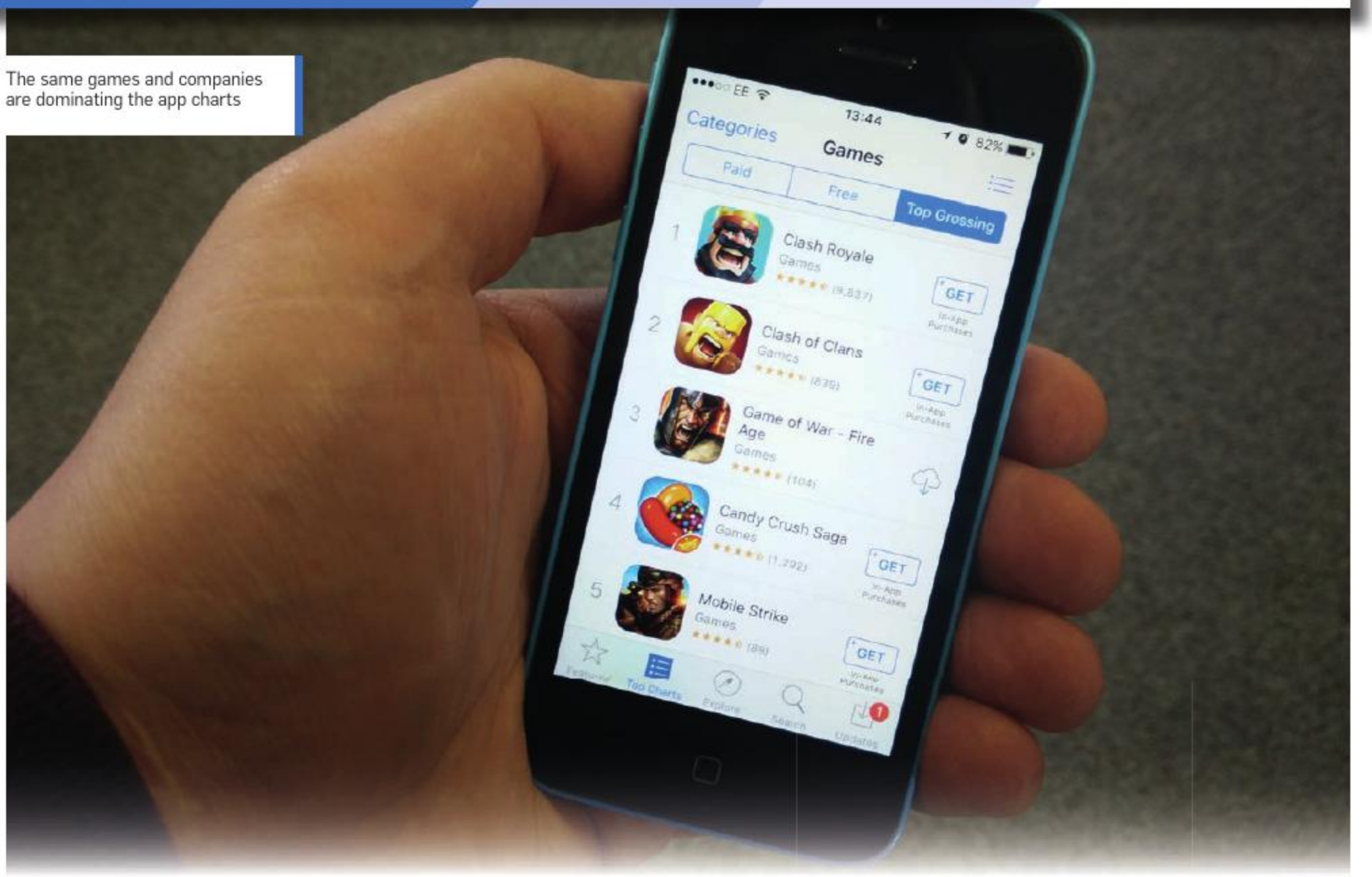
In our survey last year, we discovered that most *Develop* readers are working on titles for smart devices. This was part of the reason for dedicating this entire issue to mobile games. Even if you remain focused on other platforms, we hope you find something useful.

James Batchelor
jbatchelor@nbmedia.com

DIARY DATES
Everything you need to know about the month ahead
P06

A LESSON FROM OLD MEDIA
What mobile can learn from television
P08

THE FOURTH WAVE
Reflections on the rise of smart devices – and what could be next
P09



The same games and companies are dominating the app charts

THE FUTURE OF MOBILE

With countless mobile games studios struggling to become the next big thing on smart devices, everyone is hoping for fresh disruption to shake things up. **James Batchelor** finds out how the market is predicted to change from some of the leading firms that currently define it

Mobile remains the biggest and toughest market for any developer. The charts are dominated by the same giants, discoverability is a nightmare and the increased hardware segmentation – particularly on Android – makes it harder than ever to tailor your game to the entire audience.

With so many studios targeting the same audience, a period of predicability has settled in. But that may soon change.

A rise in brand advertised games (the *Kim Kardashian* title for instance) may change how the charts look, and push up the cost of mobile marketing.

Then there's Asia. Japan's big mobile creators struggled to succeed with their card-based titles in the West, but Korea and China's RPGs might stand a better chance. And when you consider the money at these company's disposal, that's an exciting prospect.

But the most significant trend that's changing the dynamics of the modern mobile market, is the mid-core.

Many major firms, including Zynga and King, believe the next step for mobile is with the mid-core market, an oft-touted term that is still unclear to some.

Aaron Loeb, Kabam's president of studios, defines mid-core as "competition and skill, but through a game that doesn't require the long session times of core console and PC titles".

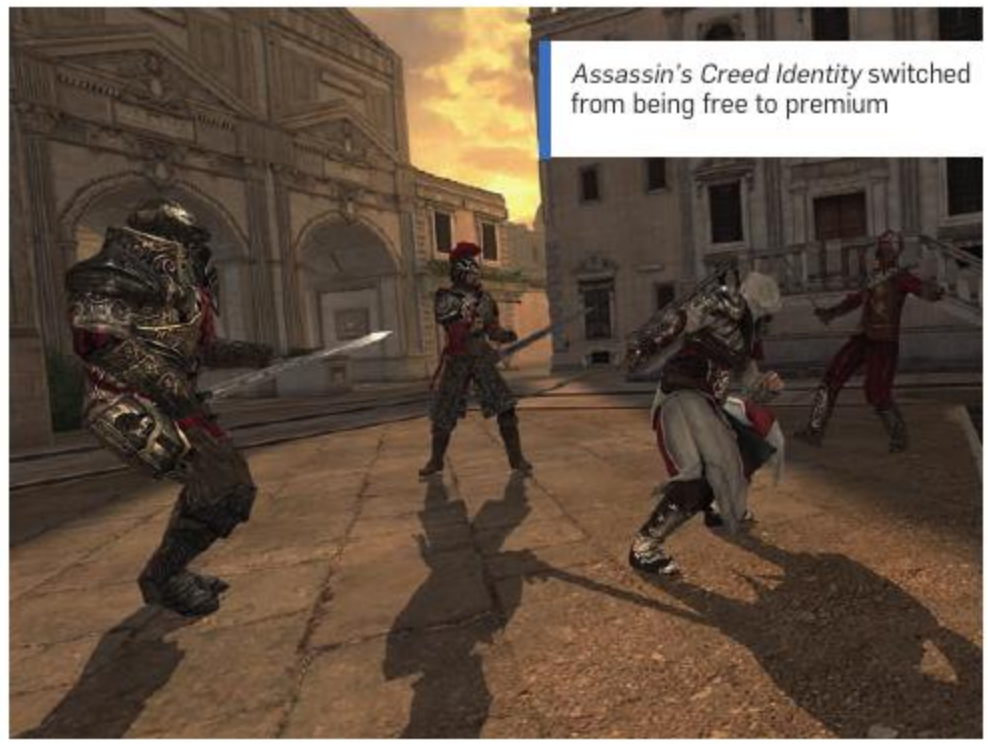
> **Hardcore gamers is the last demographic that mobile hasn't completely satisfied.**
> *Christian Reshoeft*

He adds: "John Earner at Space Ape defines it as a core game that works on your schedule rather than its schedule.

"This audience is having a huge impact. If you look at the top grossing charts in China, US, South Korea and Japan, they're dominated by mid-core. Many of the Japanese mid-core games look casual due to their play pattern and art styles, but they're deep RPGs."

So what about the most lucrative of all markets – the hardcore?

Christian Reshoeft, head of studios at InnoGames, says: "That's perhaps the last demographic that mobile hasn't provided a satisfying platform for.



Assassin's Creed Identity switched from being free to premium

"This will bring along with it a rise in mobile eSports, and a focus on not just gameplay, but also spectator modes."

THE FREE ECONOMY

So what about business models? Free-to-play continues to dominate, but it's faced its critcs.

"The huge growth of the free-to-play model shows that the vast majority of players accept and like it," says King's *Candy Crush* producer Andreas Olofsson.

Wooga's head of studio Matt Roberts adds: "The most engaged and valuable mobile players demand games that deliver many years' worth of gameplay. That depth of content is something that no fixed-price retail game can deliver indefinitely. Service-driven, IAP-based games allow players a flexible way to pay developers over time and finance ongoing content."

Of course, long-term success in the free-to-play market seems to go hand-in-hand with securing a position in the upper echelons of the charts – a feat few can accomplish outside of King, Supercell, Machine Zone et al.

"I don't think indie developers can really compete with those companies in the grossing or download charts," InnoGames' studio director Dennis Rohlfing says. "And without a major publisher, successful marketing is near impossible. They need to rely on PR.

"But they can succeed without directly competing with them. For indie developers, it's easier to create innovative games as they don't have as many constraints. They can also develop games faster due to less overhead. If a small studio manages to play those advantages, it can be successful on a smaller scale."

Loeb adds: "Brands are now in control of the mobile charts. Hardly anyone has gotten into the Top 10 without using a recognisable brand in years – Kim Kardashian, Marvel, Arnold Schwarzenegger, and so on. A small studio without access to brands will have a very hard time competing.

> **Brands are now powerfully in control of the mobile charts – Fallout, Marvel, Arnold Schwarzenegger and so on.**
> *Aaron Loeb, Kabam*

"They should do what small studios do throughout entertainment: find unserved audiences, local content that's targeted at specific demographics."

PREMIUM PROBLEMS

Opinion is a little more divided on the fate of premium games.

Yet Blue Byte's Cyril Voiron, who recently worked on *Assassin's Creed Identity*, says devs might be surprised by the demand for full-price games.

"The core audience is used to premium," he says. "We originally soft-launched *Identity* for free but, based on feedback, we switched to premium, which was better accepted. And it is working really well right now, as we are highly-ranked in the charts."

However, Rohlfing warns: "If you want to generate profit, that's clearly possible. If you want annual revenues of $20m for a couple of years? No chance. The top paid games are not present in the top grossing charts."

Future Games of London's MD Ian Harper agrees: "Consumers have voted with their wallets, relegating the market for paid titles to a small niche."

So mobile is the biggest platform in games, but also the hardest to break into. But the message from our experts is unanimous: it can be done.

"This is true mass market," concludes Voiron. "Today, five billion people are carrying a potential gaming device. And within five years, every human being on the planet will be." ■

STAR TECH

So what tech do mobile devs believe will impact smart devices the most?

"For us, it's Vulkan API," says InnoGames' Dennis Rohlfing. "This technology allows us to bring an even more amazing graphical quality to modern Android devices while allowing the players to still have a native experience."

Kabam's Aaron Loeb says: "The major thing on the horizon is mobile VR. For the first year, it'll be an opportunity for innovative, smaller companies to define the play patterns that will propel the next several years."

Finally, Wooga's Matt Roberts points to wearable tech: "It's hard to predict how wearable tech games will evolve, but we're excited by the interesting constraints of the Apple Watch, and the potential around instantly accessible, hyper-compact, body-aware, internet connected computers on our wrists."

AT A GLANCE

APRIL 5TH

HTC Vive

Valve's bid for VR hits shelves. But will it sur-*vive* the competition? (Sorry.)

APRIL 5TH

Quantum Break

After a temporal anomaly (i.e. delay), Remedy's time-bending title arrives.

APRIL 8TH

Hardcore Henry

This fully first-person movie is sure to be packed with ideas for VR devs.

APRIL 12TH

Dark Souls III

Prepare to die, scream, cry, chew your controller in half – and then try again.

APRIL 29TH

Ratchet & Clank

No, not the game - the movie. Sony's duo make their silver screen debut.

DIARY DATES

London Games Festival

April 1st to 10th

London, UK

APRIL

London Games Festival
April 1st to 10th
London, UK
games.london

British Academy Games Awards
April 7th
London, UK
www.bafta.org/games/awards

EGX Rezzed
April 7th to 9th
London, UK
www.egx.net/rezzed

European eSports Conference
April 13th to 14th
London, UK
www.esports-europe.com

Launch
April 14th
Birmingham, UK
www.launchconference.co.uk

LA Games Conference
April 19th
Los Angeles, US
www.lagamesconference.com

eSports Industry Forum
April 27th to 28th
London, UK
http://bit.ly/1pLcrRw

MAY

Interface
May 5th
www.interface.events

EVENT SPOTLIGHT

INTERFACE
Where: St. Mary's Church, London, UK
When: May 5th
What: Organised by *Develop* and *MCV*, this event gives devs the chance to pitch to publishers in private one-to-one meetings. There is also an expo and a packed conference offering advice on bringing your game to market.
www.interface.events

COMING SOON

DEVELOP #171

MAY 2016: THE START-UP SPECIAL

Are you the next big thing in the industry? Let this serve as your indispensable guide to gathering a crack team of devs, setting up your very own studio workspace, securing funding and publishing support, and selecting the right tools for your game.

DEVELOP #172

JUNE 2016: THE E3 ISSUE

As the games industry's biggest event returns for another year of big reveals, we speak to QA and localisation experts about the changing demands and increasing global reach of modern games, plus explore how devs are bringing artifical intelligence to life.

For editorial enquiries, please contact jbatchelor@nbmedia.com
For advertising opportunities, contact cnangle@nbmedia.com or jlane@nbmedia.com

Image courtesy of Nurulize

A LESSON FROM OLD MEDIA

Joost van Dreunen suggests developers should pay more attention to the TV industry

Recently I found myself on a New York subway, looking over the shoulder of someone playing *Candy Crush Soda Saga*.

With 1.4 billion mobile gamers this year, the image of people playing games out in public is no longer a very telling observation. What was telling, however, was how once this particular person ran out of lives, she simply closed the app and opened a similar game. I noticed how she had, in fact, several *Candy Crush* clones neatly put together in a folder on her phone.

It reminded me that television audiences don't watch by the programme, but by the hour. After a day of work, people come home and turn on the TV to relax. Rather than searching the many channels for the optimal television programme, most people stop changing channels when they're more-or-less satisfied or their curiosity peaks. Once a show loses them, they simply move on.

Over time, networks figured out that having a news programme coincide with people coming home at the end of the day maximises viewership and, consequently, advertising revenue. Instead of charging people directly for a specific televised or broadcast performance, networks simply try to gather a large audience at a specific time slot and sell short increments of time to companies who seek to advertise their wares. For that reason, for instance, the telenovelas broadcast during daytime are known as 'soap series', as it was companies selling detergent that funded their production.

Whenever we are watching TV, the moment a commercial break starts we tend to switch to another channel. Mobile gamers do the same. Having to wait for your lives to renew, or having to watch an ad, is an huge interruption.

Watch people playing mobile games on their commute and you could learn a lot about playing habits

Similarly to TV, mobile has ample content available, many of the apps closely resembling each other. This allows a player to stay within the same genre and move on to the next title. In this scenario, hitting a paywall or an ad is an inconvenience we sidestep any way we can.

AD VANTAGE

This similarity in how TV audiences and mobile gamers behave has implications for their design and monetisation strategies. With the global mobile games market on track to reach $32bn this year, the sheer size of the audience has advertisers excited.

As a growing share of the population shifts toward mobile phones as their primary and most personal device throughout the day, the amount of advertising budget steadily grows.

Last year, mobile ad revenue was roughly $19bn in the US alone. And keep in mind that mobile advertising didn't even exist before 2010.

> **When an ad break starts, we tend to switch channel. Mobile gamers do the same.**
> *Joost van Dreunen, SuperData Research*

So it makes sense for mobile devs to consider advertising as a revenue source. Especially for the smaller firms out there, who lack the marketing budgets that Supercell and King have, ad revenue can represent between 20 to 50 per cent of monthly income. Another selling point of earning money from advertising is that it provides smaller devs creative freedom from publishers.

But advertising can be a slippery slope. For one, we sacrifice a relatively large percentage of screen real estate to serve banner ads. Regardless of how great the 'creative' gets, most users will consider ads on their mobile device as annoying and, at best, invisible.

People have become adept at identifying what is relevant to them. No longer do audiences passively consume messages – they actively organise, customise and create media experiences that suit them.

So next time you see someone on their mobile device, it may look like they're crushing candies – but they're really playing the game of not being interrupted by your sponsor. ■

Joost van Dreunen is co-founder and CEO of SuperData Research
www.superdataresearch.com

MEANWHILE ON DEVELOP-ONLINE.NET

The Hachette GameBook: 'We are reinventing the storytelling process'
bit.ly/1VRj7tA

Jason Graves on the changing tune of video game music: 'No one wants a safe score any more'
bit.ly/1UmlYdD

Games on Apple TV: New hope or just hype?
bit.ly/1Mj2R2d

THE FOURTH WAVE OF MOBILE

Simon Oliver discusses the evolution of the smartphone gaming market

Mobile's journey has been extraordinary over the past nine years, since it truly began with the launch of the iPhone in 2007 – we'll set aside the taco-phones of mobile's dark ages.

Mobile development went from being widely ignored to becoming the subject of tentative curiosity, and then the target of a full-on gold rush in the space of six months – and the pace has barely slowed since.

We got in early with our first title, *Rolando*, and it was a huge rush to be able to ride the first wave that followed the launch of the iPhone. The early days were filled with creative, innovative titles exploring new genres and mechanics: *Eliss*, *Flight Control*, *Fruit Ninja*, *Tiny Wings*, *Pocket God*, *Helsing's Fire*, *Sword & Sworcery* – all demonstrating the massive potential of the platform and attracting devs to mobile like moths to that overpriced cashmere sweater you never wear.

The second wave was kicked off by a seismic event in 2009: the dawn of IAP and a huge shift to free-to-play. This second wave brought with it major changes to the mindset of developing games – moving from self-contained products to always-on services designed to be played frequently and over a far longer time period.

FREE FOR ALL

This shift brought with it a lot of experimentation in design; while some was outright abusive to players – "Pay now or the puppy dies!" – this also demonstrated the power of social connections, the power of selling well-designed IAPs that provide clear value and, above all, the extraordinary power of free.

The third wave was catalysed by this experimentation and the influx of new skills and disciplines, providing a deeper understanding of the audience, its behaviour and the context of mobile play. As this knowledge-base matured we saw the arrival of some of the titans of the mobile market - 2012 alone saw the release of *Clash of Clans*, *Candy Crush* and *CSR Racing*, fuelled by the dizzying increase in power of these devices. These titles pushed audience size and revenues to incredible new levels.

> **Clash Royale clearly shows the audience is starving for something new.**
> *Simon Oliver*

The rise of free-to-play has had a profound effect on the premium side of the business – disrupting discoverability, sources of funding and the willingness of the audience to pay for content. Yet, despite the increasing challenges of the paid space, independent studios have continued to demonstrate the creative potential of the platform during this third wave, crafting beautiful, creative pay-once titles that explore new genres, mechanics and directions for mobile: *The Room*, *Year Walk*, *Device 6*, *Badland*, *Monument Valley*, *80 Days*, *Leo's Fortune*, *Threes*, *Alto's Adventure*, *Her Story*, *Prune*, and many more.

Another change is about to happen. At conferences and in conversations with other developers, I keep hearing the same thing: that there is a greatly increased appetite from the mobile free-to-play audience for new and fresh genres and a need to break out of the highly saturated, dominant genres: build and battle, tycoon, match-three, CCG.

This appetite presents a fresh opportunity for those looking to innovate and build upon everything that has been created and explored in the last nine years. It will drive the fourth wave of mobile, which I'd argue has already begun with Supercell's unique MOBA/CCG fusion *Clash Royale*, whose rapid embrace and extraordinary rise clearly demonstrate that the audience is starving for something new.

So as this fourth wave brings huge creative potential, enormous financial opportunity, and an audience of billions crying out for innovative, engaging content, there's nowhere I'd rather be. It won't be easy, you might not be able to do it alone and success won't be found on well-worn paths, but there's never been a more exciting time to be part of mobile. ■

Simon Jackson is founder of mobile studio and *Seabeard* dev Hand Circus. He's also an advisory board member for Develop: Brighton. **www.developconference.com**

The Stoic Saga: How the team battled personal debt and 'perpetual crunch'
bit.ly/1pd45S3

Why should you consider contracting?
bit.ly/1TAk4GS

Telling a story through match-three in Wooga's Futurama: Game of Drones
bit.ly/1LHFSIx

To see all of our reader blogs visit: **www.develop-online.net** ■ Email **mjarvis@nbmedia.com** to contribute your own blog

unleash

new worlds • immersive experiences • dynamic characters

Go ahead. Try to find a more comprehensive showcase of content creation tools in one place. You won't.
Experience all of the tech and learn from the masters to change your games forever. Featuring animation, audio, production, virtual reality and more, NAB Show® will help build the world — and the characters — you've always dreamed of.

Deadpool: Leveraging Technology to Create a Stunning Superhero Film
Hear how design experiences in the gaming industry, including cinematic work on epic video games, help to create this stunning action-packed film.

First Forays: High Dynamic Range in Animation
Explore how the animation industry is not only uniquely poised to take advantage of the benefits afforded by the technology, but also uniquely challenged by it.

Re-Create Hand-Made Animation Styles with After Effects
Learn how to make your animations look like they were made by a human being rather than a computer.

Virtual Reality — New Medium, New Storytelling Language
Discover what's next for VR storytelling, beyond classic cinema and classic video games.

VIRTUAL & AUGMENTED REALITY PAVILION

NEW! Come see how VR, AR and mixed reality can be used for news, advertising, sports, live broadcasts, entertainment and more from the leading VR and AR content producers and tech companies.

Sponsored by technicolor

Supported by

APRIL 16–21 2016

LAS VEGAS, NV USA

NABShow.com

#NABShow

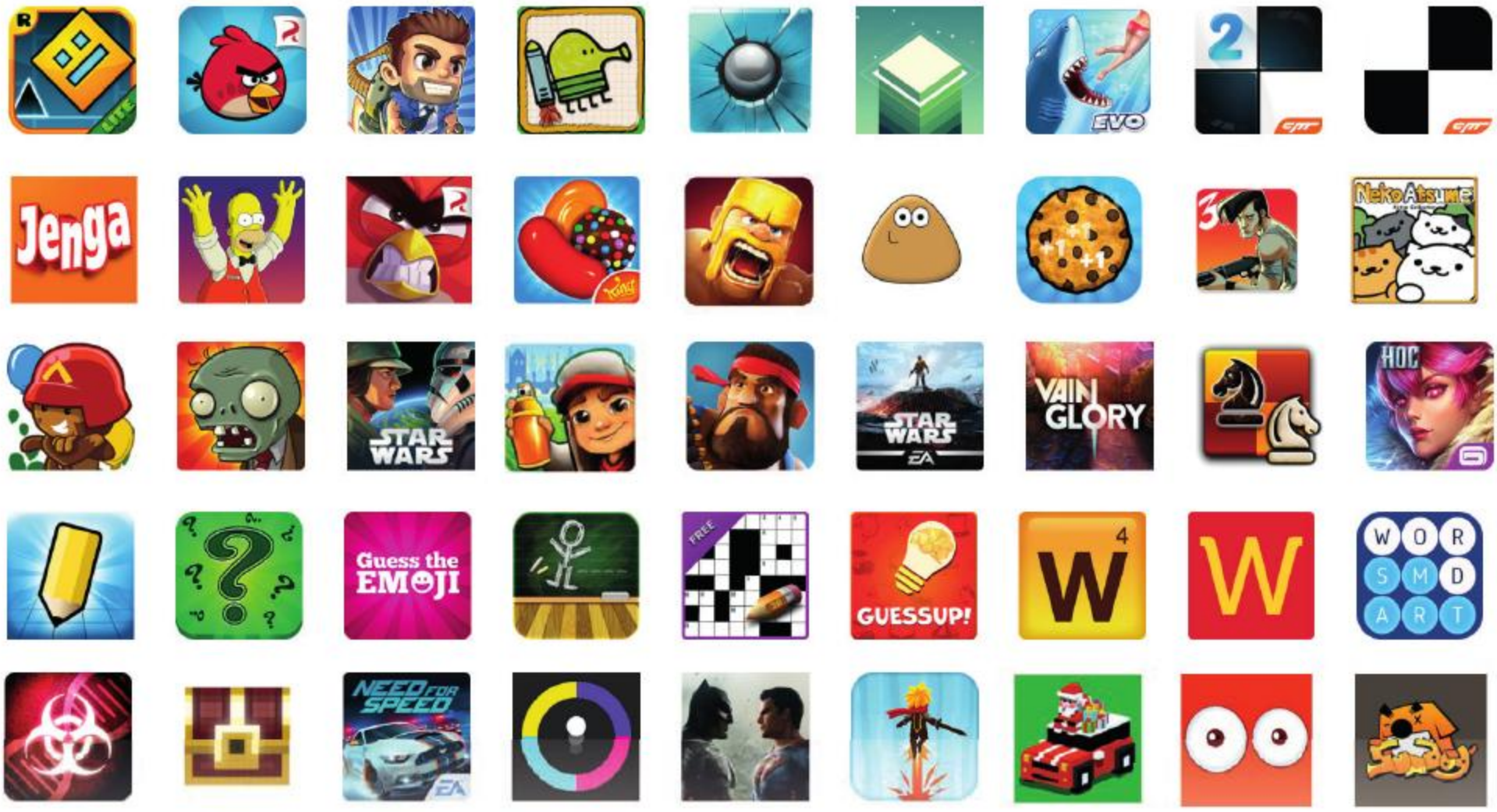
NABSHOW® Where Content Comes to Life

› register today Free Exhibits Pass Code PA81

TOUCHING ON ESPORTS
How Vainglory is proving the sceptics wrong
P15

WHO NEEDS MOBILE ADS?
Striking the balance between monetising and irritating players
P19

CONSOLE CONNECTIONS
How Sega's Hardlight studio brings top IP to smart devices
P22



STEALING THE LIMELIGHT

With today's saturated mobile marketplaces making it harder than ever to get your name noticed, **Matthew Jarvis** asks established studios Space Ape, Elex, Spry Fox, MAG Interactive and State of Play for their tips on perfecting your app store presence and making your title a game to be remembered

Candy Crush, *Crossy Road*, *Clash of Clans*, *Game of War*... These names are now as well-known as *Mario*, *Metal Gear Solid* and *Grand Theft Auto* – despite being a fraction of the games industry's most iconic franchises' age. Just as 'Nintendo' was synonymous with every console released in the '80s and '90s, *Candy Crush* has come to represent the entirety of mobile gaming for the wider public.

So, how did these mobile titans go from fresh-faced newcomers to some of the most successful titles released in the last few decades – if not ever?

"I don't think there's a silver bullet," muses David Edery, CEO of *Alphabear* developer Spry Fox. "If you have strong established IP that you can leverage, that obviously helps. Aside from that, it's the usual things: trying to identify underserved niches that you think you can credibly reach, building highly polished, original games and using your soft launch to improve them as quickly as possible, adding viral elements that break through the noise – much easier said than done – and working with the major distribution platforms so they have a reason to feature your game. Even after you do all that, there's still a decent chance you'll fail – the mobile game ecosystem is ridiculously competitive."

> **If another game is doing what you do but better and was first to market, then that's where the audience will go.**
> *Katherine Bidwell*

Katherine Bidwell, co-founder of *Lumino City* creator State of Play, agrees that "it's tricky to pinpoint any magic formula that would create an instant hit".

"If there was one, everyone would have hit games – and, unfortunately, that just doesn't happen," she continues. "My tip would be to have a game that genuinely stands out and isn't a clone of another formula; if another game is doing what you do but better and was first to market, then that's where the audience will go. If you are doing something different to everyone else, then shout about it. Make sure the fact that it's special is the ▶

first thing people see in your description or the first scene of your trailer."

The last five years have made bringing a game to market easier than ever for devs. That's just the start, however: an influx of competitors has made effective promotion critical. MAG Interactive CEO and co-founder Daniel Hasselberg recalls his experience launching mobile hits *Ruzzle* and *WordBrain*.

"In the early days – 2012 to 2013 – MAG benefited a lot from using Facebook's Open Graph stories to automate sharing between players and their friends," he reveals. "At the peak we got about one million referrals per day from Facebook to the App Store. Today, you need to rely more on word of mouth and peer-to-peer messaging than news feed posts."

THE LONG HAUL

An early burst of success can be a hard-fought victory for mobile studios, but today's fast-moving games market can see an audience dissipate as it moves onto the next big thing.

Recent figures from *PocketGamer.biz* revealed that approximately 500 new titles are released on the iOS App Store every day. That's without counting sales and promotions on already established franchises continuing to attract players.

"There has been an explosion in the number of active iOS devices, which has massively increased the market potential," explains Bidwell. "At the same time, there has been increased competition from a huge number of apps, a resultant 'race to the bottom' in price, with many free-to-play titles and a swarm of low quality titles."

Edery says that building for longevity is a must in order to compete with the giants of mobile – but warns against investing too much in any one title.

"The most successful developers are designing games that not only generate enormous amounts of revenue, but also entertain players for years on end," he observes. "They are dominating the charts – which look scarily similar year after year – using their enormous warchests to drive up the cost of paid user acquisition and just generally sucking all the oxygen out of the ecosystem.

"How have we adjusted to that? We're paying a lot more attention to metagame design, thinking a lot more about virality and trying to be more disciplined about keeping our dev cycles short and avoiding feature creep, since that makes already risky projects that much riskier. We're always looking for opportunities that other developers are ignoring, but those are harder and harder to find nowadays."

Yet risks can pay off, as Simon Hade – COO of *Samurai Siege* and *Rival Kingdoms* studio Space Ape – enthuses.

"We're looking at things that have been popular in the past, on other platforms or in the East, and exploring game mechanics that have just never been done before," he reveals. "This is a little bit like panning for gold; it's higher-risk, you need to have multiple teams working in parallel and be totally comfortable with the idea of killing off projects early and often – but those are the kinds of risks you need to take to break out."

> **Pay more attention to the metagame, think about virality and try to keep dev cycles short.**
> *David Edery, Spry Fox*

ADAPT TO SURVIVE

Maintaining a healthy audience around a game can pre-empted before launch, but the title's evolution post-release is just as vital in growing its presence.

"It is absolutely most effective to do continuous development of the game itself," advises Hasselberg. "When we launch something new and interesting we give the players a reason to come back, as well as a reason to tell their friends that they should get back into the game, in case they have churned."

Edery echoes the importance of continually refining: "Frequent updates of significant scope: ideally one a month, one every two months at worst. That's going to do more for retention and word-of-mouth than most other things, and it can also get you featured."

Peng Yue is producer and COO at *Clash of Kings* developer Elex. He reiterates the need to frequently update.

"Develop based on users' needs," he adds. "Let players hear you every week, see your movements and know you are improving everyday."

Not all community management is handled in virtual space.

"We have found that going to game festivals and speaking at events has been a great way to pass on the message of *Lumino City*," Bidwell recalls. "Entering the game for awards can also be a crucial bit of PR for small companies, where your game can be showcased to lots of people and validates what you've made."

Of course, not every title can win big at major competitions. Yet, positive customer reviews and word-of-mouth can be just as valuable in increasing app store reach – as long as devs are cautious of the potential backlash if players feel forced to 'Rate and Comment'.

"We try to find ways that make the game more fun if you play with friends," explains Hasselberg. "Even in single-player games you can often find some social twist that makes gameplay more fun and rewarding if you have friends playing as well. We always try to be careful and respect the players, and not make them feel abused by the game's desire to have them inviting friends."

Hade agrees with Hasselberg's praise of innate shareability – and adds that aspects as straightforward as an eye-catching style can contribute.

"Focus on making a game that is fun, compelling and social at it's core and you get virality for free," he says. "There is probably some low-hanging fruit to address a certain type of user through SNS integration, text and email invites, and the like, but making your game readable by someone sitting next to you on the bus or looking over your shoulder – that is more important."

Bidwell summarises: "By far we've found that the most important thing is to create a great title that the stores will want to promote. Review and share mechanics are great, but by themselves they're nothing without something great to share. If your game suits it, work out a way to make sharing as intrinsic to the gameplay as possible."

AHEAD OF THE CROWD

Staying on top of what players are searching for may seem an impossible task, but trying to get in front of the curve is a must for any studio seeking long-term sustainability.

"Social online experiences is the biggest trend for the future," Yue predicts. "Interaction and attachment among people is always an attractive demand for players."

Bidwell forecasts a return to more traditional business models, as pricing structures popularised by the mobile market fall out of fashion.

"In the future, premium priced games will make a dent in the onslaught of free-to-play," she says. "The audience is now looking for a 'pay once, get it all' experience, and often get frustrated by the sting in the tail of in-app purchases."

Hasselberg closes by advising developers to take their time and launch a game built to last – rather than becoming another victim of the mobile gold rush.

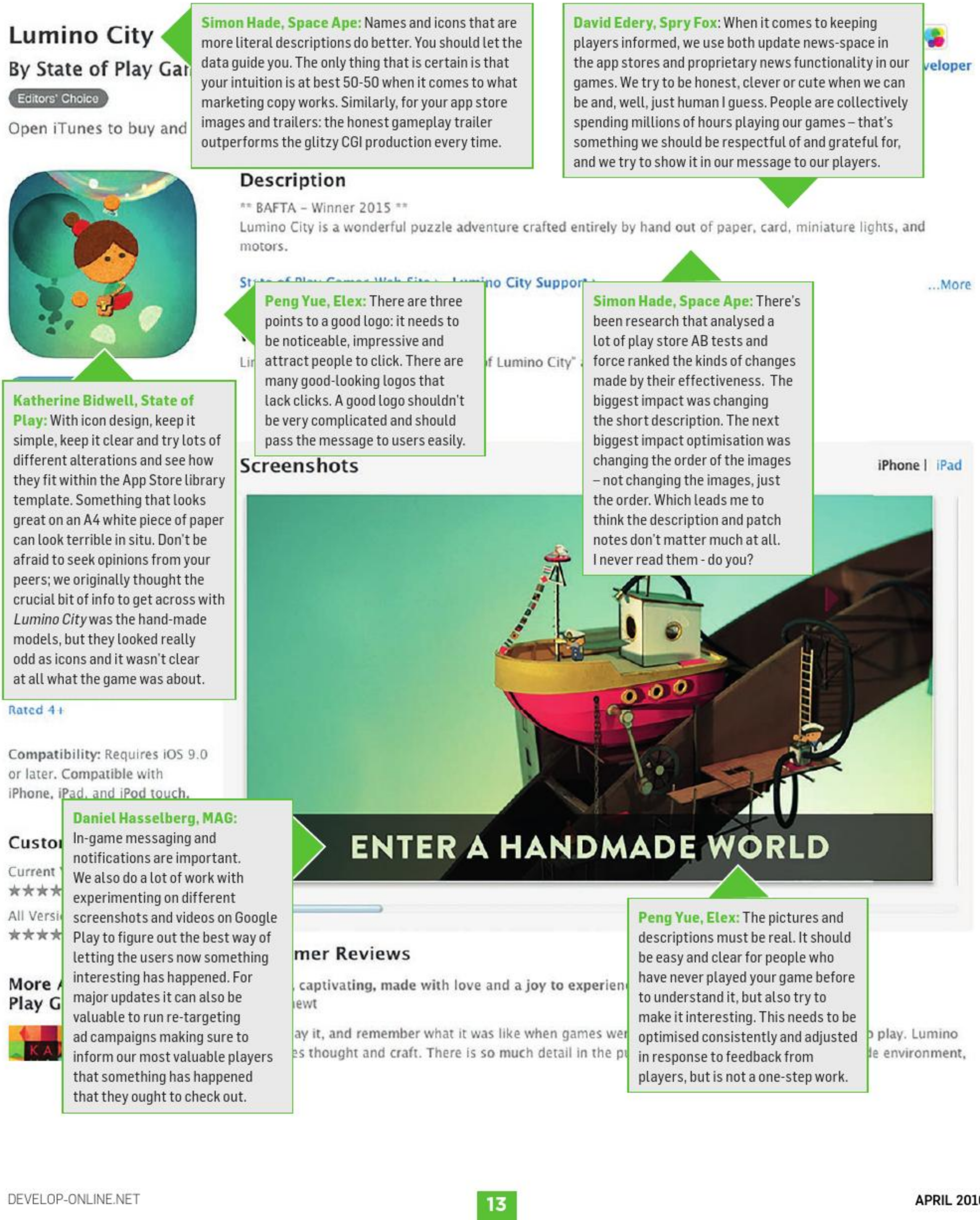
"Developers need to become much better at learning from their soft launch data," he warns. "Going worldwide with a title that doesn't work is more distracting than anything else – patience is a good thing to make sure you have a very solid game first." ■

KonaDylan Ellis 19 February 2016
★★★★★
Samurai Siege I played this both on my Motorola Xoom tablet (MZ 609) and my Motorola Moto X gen 1 phone. The latest update has caused issues with longer loading times on both devices. But even worse on the Xoom tablet it just paints in some of the objects and locks up. Unplayable at this point.
Hadiya Farrukh 20 February 2016
★★★★★
Hi it's a lovely lovely game I will recommend you this game and do you know a fabulous thing about it that when you have downloaded in any phone this game first time if you
Keiren Bellingham 18 February 2016
★★★★
Great game play and content But when I try to load it up there is just a blank screen and nothing happens I tried waiting for a while but it is still not working it is a little disappointing I'm playing on a very strong WiFi signal and it had worked previously This is a great game and I would hate to have to stop playing because of some problems. But I'm sure it will get fixed and I can give you a 5 stars and be able to play soon.
Clifford Lawrence 6 March 2016
★★★★
Unique Concept! Love it!!!!!! It has two types of Wars. Conquest and Classic. Conquest is one of the best strategic war type you will ever find.....plus the tournaments on weekends are awesome!!!!!

Customer reviews can be a blessing for smaller games – but quickly turn sour if players feel forced to rate a title

STORE APPEAL

We break down the aspects of an effective App Store page with help of mobile experts


Lumino City
By State of Play Gar
Editors' Choice
Open iTunes to buy and
veloper
Description
** BAFTA – Winner 2015 **
Lumino City is a wonderful puzzle adventure crafted entirely by hand out of paper, card, miniature lights, and motors.
...More
Screenshots
iPhone | iPad
ENTER A HANDMADE WORLD
Rated 4+
Compatibility: Requires iOS 9.0 or later. Compatible with iPhone, iPad, and iPod touch.
mer Reviews
captivating, made with love and a joy to experien
play. Lumino
environment,

Simon Hade, Space Ape: Names and icons that are more literal descriptions do better. You should let the data guide you. The only thing that is certain is that your intuition is at best 50-50 when it comes to what marketing copy works. Similarly, for your app store images and trailers: the honest gameplay trailer outperforms the glitzy CGI production every time.

David Edery, Spry Fox: When it comes to keeping players informed, we use both update news-space in the app stores and proprietary news functionality in our games. We try to be honest, clever or cute when we can be and, well, just human I guess. People are collectively spending millions of hours playing our games – that's something we should be respectful of and grateful for, and we try to show it in our message to our players.

Katherine Bidwell, State of Play: With icon design, keep it simple, keep it clear and try lots of different alterations and see how they fit within the App Store library template. Something that looks great on an A4 white piece of paper can look terrible in situ. Don't be afraid to seek opinions from your peers; we originally thought the crucial bit of info to get across with *Lumino City* was the hand-made models, but they looked really odd as icons and it wasn't clear at all what the game was about.

Peng Yue, Elex: There are three points to a good logo: it needs to be noticeable, impressive and attract people to click. There are many good-looking logos that lack clicks. A good logo shouldn't be very complicated and should pass the message to users easily.

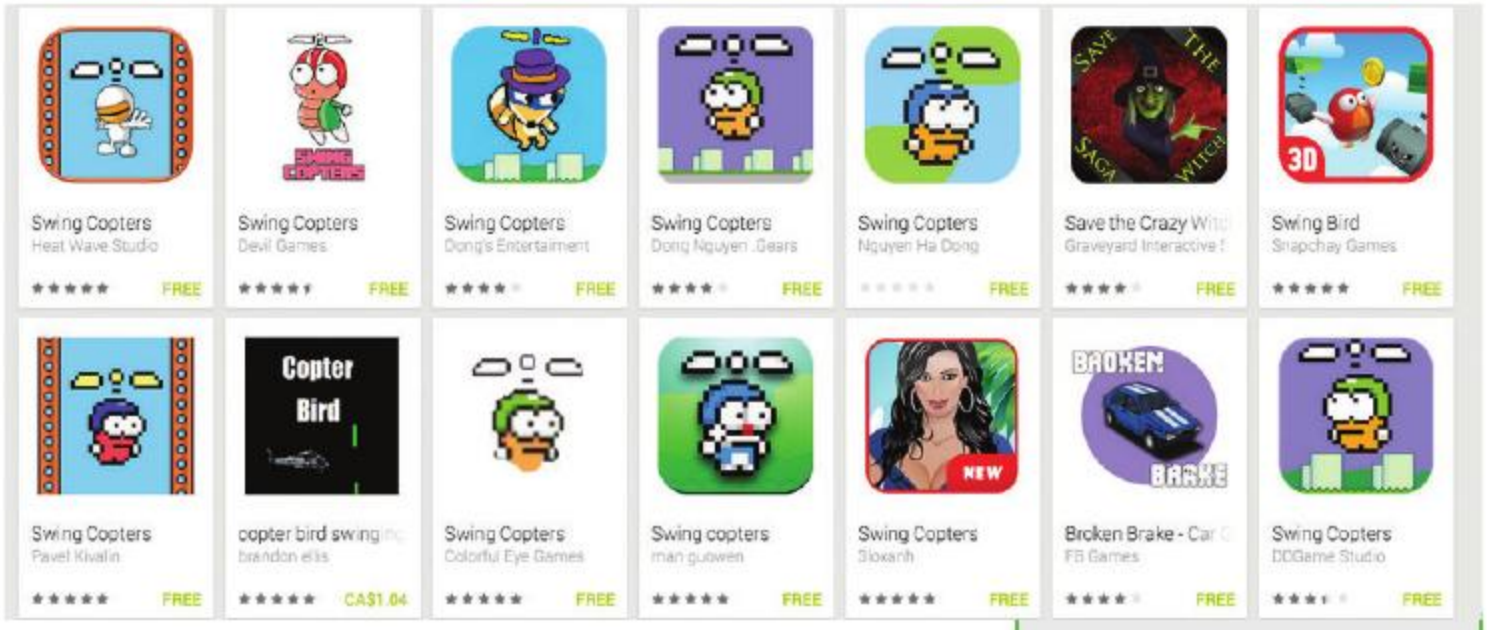
Simon Hade, Space Ape: There's been research that analysed a lot of play store AB tests and force ranked the kinds of changes made by their effectiveness. The biggest impact was changing the short description. The next biggest impact optimisation was changing the order of the images – not changing the images, just the order. Which leads me to think the description and patch notes don't matter much at all. I never read them - do you?

Daniel Hasselberg, MAG: In-game messaging and notifications are important. We also do a lot of work with experimenting on different screenshots and videos on Google Play to figure out the best way of letting the users now something interesting has happened. For major updates it can also be valuable to run re-targeting ad campaigns making sure to inform our most valuable players that something has happened that they ought to check out.

Peng Yue, Elex: The pictures and descriptions must be real. It should be easy and clear for people who have never played your game before to understand it, but also try to make it interesting. This needs to be optimised consistently and adjusted in response to feedback from players, but is not a one-step work.

'DON'T WASTE YOUR TIME ON CLONES'

In a market flooded by copycats, Flowplay CEO **Derrick Morton** offers advice to devs on how they can make their game stand out



Cloning and copycat mobile games is an ongoing problem – and perhaps a temptation for some devs. After all, app stores are already overcrowded without the presence of countless *Candy Crush, Clash of Clans, Flappy Bird, Swing Copters, Crossy Road* and more, making the prospect of building original titles more daunting. If you can't beat 'em, clone 'em, right?

But to studios dedicating their time to mimicking the success of others, Flowplay CEO Derrick Morton says this: Stop wasting your own time.

"Making games is so hard and takes so much work, both in terms of development and post-development," he tells *Develop*. "So if you're not trying to create something original that you're proud of and enjoy being part of, you're wasting your life.

"Why would you spend years making something derivative, that's just based on someone else's success? I want to come to work every day expecting it to be fun, to be excited about seeing my team and talking about doing something new. If you're just making a derivative game, I don't think it's as fun, you're not going to have a great day or be proud of the work you've done when you look back."

Morton acknowledges why so many similar titles have found their way onto app stores. For every search-optimised, lazy title (*Real Speed: Need for Asphalt Race – Shift to Underground CSR Addiction 14*, anyone?), there will be studios who are genuinely trying to tap into the zeitgeist surrounding certain genres or mechanics.

"There's just so much buzz around mobile, and people follow trends," he says. "It becomes a mantra for some people: if this is the latest and greatest thing so everybody should go there – the next thing that's attracting people is virtual reality.

"Too often people watch what's happening and copy what other everybody else is doing. But try looking at the market and asking: Where do we fit in? What's the best place for us to compete strategically and be the most successful? Rather than just thinking, well, everyone's going to mobile so how are they doing it?

"That's the kind of things I encourage developers to do: rather than just go and make a *Clash of Clans* clone, think about whether there's a hybrid of that and another genre you can explore," says Morton. "Or is there a completely different spin on the massively multiplayer strategy game model that you can bring to the market, in terms of the milieu, character types, and so on?"

> **Too often people copy what everybody else is doing. Try asking: Where do we fit in?**
> *Derrick Morton, Flowplay*

"The path to success might seem obvious: do a blast campaign, be in the Top 20 and hope that those organically-acquired users that you get from being high in the charts will bring down the cost of user acquisition and allow you to maintain that Top 20 position – but if you can't then you're screwed.

"Even if you can spend $100,000 trying to get into one of those Top 20 spots, but then you'll be praying like hell you can stay up there."

MIX IT UP

Morton cites his own firm, which specialises in social casino games, as an example of how you can bring some originality to familiar ground. Some of Flowplay's titles mash up genres to create new hybrids – *Fringo* is a combination of slots and bingo.

Similarly, Morton urges devs to think about how they can ensure their title will get players talking, whether it's about an unusual setting, a fresh combination of mechanics or perhaps a quirky new idea. Remember, you're developing games for a world of YouTubers.

"I don't think people are paying enough attention to viral and word of mouth mechanisms," he says.

"Try to create a game that lends itself to being shared, to being recommended to friends. And the main way to do that is to first and foremost have a great game." ■

MOBILE LAST

Derrick Morton recently wrote a piece for *Develop* 's website about why mobile devs should actually release their titles on other platforms first – a strategy he stands by.

"It's better to test out your game in places that are not so expensive, like social networks or games portals," he says. "Somewhere you can test and fine-tune it so you can work out what doesn't and doesn't work before you take it to mobile before it gets serious.

"Browsers are the cheapest and easiest places to test. You can find real users that will tell you what they do and don't like about the game, and you can see where you're getting traction. It's easier than trying to launch something on mobile fully-fleshed and spending a lot of money on acquiring users only to find out the game needs tweaks or needs to go in a different direction.

"If you don't get a seven-day return rate of 25 per cent or more, even after fixing things, that's not a game you should take to mobile. If you can't get 30-day retention rate of 10 per cent, that's not a game you should bring to mobile, because you're just going to lose money over there."

SEEKING 'GLORY IN MOBILE ESPORTS

With Dota 2 and League of Legends continuing to dominate the competitive PC scene, Super Evil Megacorp hopes that its debut title Vainglory will be the mobile MOBA to make pro-gaming portable. **Matthew Jarvis** speaks to COO Kristian Segerstrale about the colliding the worlds of hardcore and casual

The hardcore devotees of PC and casual fanatics on mobile share much in common. Many invest hours a day, learning the patterns of their chosen craft in pursuit of the next rung on the leaderboard ladder.

It's a connection that Super Evil Megacorp takes full advantage of in *Vainglory*, a title that combines the competitive grip of PC MOBAs with the accessible touch controls of smart devices. The studio is similarly divided, serving as the home to PC and console alumni from Riot, Blizzard and Rockstar, as well as mobile specialists out of Supercell, Glu and Zynga.

"We spent a lot of time on controls," reveals COO and executive director Kristian Segerstrale. "For a title to be viable competitively, the control input must be instantaneous, precise and provide a gaming environment where you don't even think about the control input at all – you're just battling."

> **It's incredibly sad that this generation is growing up with three-minute gaming sessions.**
> *Kristian Segerstrale, Super Evil Megacorp*

Members of the self-appointed 'PC Master Race' may turn their noses at the suggestion that a 10-inch touchscreen could recreate the accuracy and speed of a keyboard-and-mouse setup. Segerstrale insists that the gulf isn't as wide as it seems.

"We developed our own engine from scratch precisely for competitive play, with very fast hyper-accurate controls in mind," he recalls. "It turns out many of the best players in the world right now play on very small screens.

"It's really the same as the settings on your PC mouse – you can either choose to be very accurate but slow, which is basically a larger screen, or very fast and a little bit less accurate, which is like a fast mouse."

As for players' obsession with actions per minute ('APM'), Segerstrale says the simplified nature of touch lends itself to streamlining in-game moves.

"Things like kiting, where you run in one direction and shoot in the other, are mechanically tricky on a mouse and not precise either, because you need to move-click, move-click," he explains. "Tapping with two fingers on a touch screen is more accurate than a mouse in that particular circumstance.

"There are no swipes or gyroscope controls or anything inaccurate. It's all literally just a single tap."

Vainglory's control scheme does away with swipe and gyroscopic inputs to maintain the accuracy needed for competitive gaming

MAKING IT ON MOBILE

Vainglory isn't the first to attempt to seed interest in mobile eSports, but is one of the first major attempts to translate the mechanical complexity of core PC titles.

In fact, *Vainglory* is in many ways the antithesis of mobile design: it's not designed to be absorbed in bite-size chunks, but in hours-long marathons.

"It is incredibly sad that this generation is growing up with three-minute gaming sessions," Segerstrale laments. "When we grew up, you'd carry your PC to your friend's house and play all night. We're trying to bring that style of gaming."

Vainglory faces a hard challenge in convincing players that mobile competitive gaming is viable. Segerstrale remains confident.

"Every time a style of play moves from one platform to another, there's skepticism," he observes. "If you spend enough time figuring this out, respect the players, focus on delivering a great experience and really hold yourself responsible for getting there, the opportunity is absolutely wide open." ■

WHO WILL WIN?

HEADLINE PARTNER

CV BAY

GOLD PARTNERS

MOGI Group international

amiqus

SUMO DIGITAL

CRYTEK

King

SAVE THE DATE

FOR THE WONDERFUL

develop AWARDS 2016

ALL THE FUN OF THE FAIR

July 13th, 2016

The Hilton Metropole, Brighton

INTERESTED IN SPONSORSHIP?

Call Jennie:
020 7354 6000
or email jlane@nbmedia.com

FANCY ATTENDING?

Of course you do!
For table enquiries and ticket sales
call Georgia on 020 7354 6010
or email gblake@nbmedia.com

ROLL UP! ROLL UP!

EXCLUSIVE DRINKS RECEPTION SPONSOR
KEYWORDS STUDIOS

AWARD PARTNER
Aardvark Swift

EVENT PARTNER
tandem events

TABLE GIFT PARTNER
opm jobs.com recruitment

CREATIVE
ASSEMBLY™

GATHERING THE GREATEST
FOR MORE THAN 25 YEARS

SEGA®

WHO NEEDS MOBILE ADS?

Advertising is a major source of revenue for mobile developers, but how do you take full advantage of it without deterring players and ruining your game? **James Batchelor** asks experts for their advice

Few studios will ever make their fortune from simply selling mobile games. While a handful of premium titles do find success, the market remains dominated by free-to-play games.

Developers around the world continue to find innovative ways to encourage players to spend on in-game purchases – and, crucially, keep spending – but even the biggest titles only monetise a fraction of their users. So how are games makers supposed to generate revenue?

For many, the answer is mobile advertising. Not the most thrilling prospect, granted, but in many ways a necessary evil.

"Mobile ads keep games free," Srinivas K Chaitanya, Gaming VP and GM of InMobi, tells *Develop*. "They help monetise those free users – the majority of most F2P devs' audience – who are perfectly welcoming of the thoughtfully tailored ad experiences as part of their gameplay."

Of course, the use of these ads depends greatly on the type of game you have released. Eric Fang, VP of Product at mobile ads platform Mobvista, observes that "heavy" games such as RPGs or titles where money is already involved such as casino apps are tougher to monetise through ad placement because this would "affect their user experience". Tougher, he says, but not impossible.

"If the publisher wants to use mobile advertising for monetisation of the 'heavy' games, video ads and incentive ads is the best option," he explains. "Casual games could be monetised easier though ads as a majority of people don't want to spend money on them.

> **Overuse or misplacement of ads results in a drop in user engagement and retention.**
> *Srinivas K Chaitanya, InMobi*

Justyn Lucas, UK and EMEA sales director at mobile ad agency Appcoach, stresses that different types of ad placement each have advantages. But there's a difficult balance to strike between frustrating your audience and making effective use of any ads.

"Full screen ads mean interrupting the players' game, whereas a banner ad does not interrupt playtime and can be put anywhere at anytime," he says. "But from a monetary perspective, full screen ads yield much greater revenue per view as the player is forced to view them and close down manually. On a costs basis, per view, full screen adverts usually achieve at least ten times more ad revenue than standard banner ads, but they are viewed less often than banner ads."

This is just one of the multiple decisions developers must make on how they show advertisements within their game, as well as how often, and such decisions require a little creative thinking. Fang cites a pirate game where ads were only activated when players tapped on a floating chest marked with a '?' as a prime example.

Chaitanya adds: "When thoughtfully tailored into the user's gameplay, ads have proven to generate revenue, while delighting users. But overuse or misplacement of ads usually results in a drop in user engagement and retention. Best practices have been established across various game types over the past few years to avoid these pitfalls."

EVERYTHING'S CHANGING

As Chaitanya says, devs today have the upper hand thanks to years of learning from previous experiments with mobile ads. Trial and error has shown what does and doesn't deter players, with agencies able to advise on the best strategies.

"We've noticed some remarkable trends in mobile advertising industry: fewer banner ads, increase in native ads, growing popularity of the video advertisement," says Fang.

"With the tech developments as well as faster and accessible mobile internet, we're seeing a shift to more dynamic and entertaining ad formats. The mobile users' habits and preferences are also evolving: now they are ready to spend their time on ads on condition that they are interesting and diverting."

Shani Rosenfelder, senior marketing manager at ad analytics firm

Appsflyer, adds: "In an effort to provide better ads for users and tackle adblockers, new advertising formats are all about the user experience. Video,

In-game ads such as banners around a stadium are a great way to avoid interrupting players

interactivity and native ads have ushered in a new era in mobile advertising: engaging and ultra-quick loading time is in, disruptive, data-consuming and time-wasting is out.

"In gaming this trend is even more evident, as we've seen a significant jump in the use of video ads because of their improved performance. Video ads for mobile games are especially effective because they show the user what the gameplay is like, thereby separating the interested from the uninterested users. As a result, video ads enable advertisers to invest in quality users."

However, Fang warns that video ads present their own problems. Because they're more data-intensive than simple banners, they can increase end users' expenses on mobile internet.

"This might become considerable barrier for the monetisation through video advertising in some countries such as India and Indonesia," he warns. "Not only should game developers make sure that their title support video advertising but also provide the technical opportunity to compress video inside the app for balancing the quality and size."

Chaitanya reports that InMobi has seen an increase in programmatic advertising: "Machines are buying and selling advertisements based on an audience-centric world-view. We live in a world where ad spends are democratised, and no publisher gets a larger share based on their 'brand name' alone. Underlying audiences is what truly drive spends.

"Game developers should worry about the ad experience and how it impacts retention and engagement.

> **Let the users make their own decisions whether to watch ads or not. Also, wait two to three days after installation.**
> *Eric Fang, Mobvista*

Choosing two to three close ad partners who cover a global user footprint, bring in programmatic demand, while also delivering the most user-centric ad experience possible is key."

KNOW YOUR AUDIENCE

Choosing your ad strategy may seem daunting – and, frankly, a far cry from the creative work you'd rather be doing – but devs should already have everything they need to help inform these decisions: their audience.

"In order to harness the best chances for success, developers need to be proactive and absorb the tendencies of their userbase," Tapdaq's CEO and co-founder Ted Nash explains. "The importance of context in advertising will continue to grow. The mobile phone already knows so much about its user, enabling it to deliver extremely relevant information and experiences at the right time in the right place so the user will expect nothing less from the adverts their consuming too."

Lucas adds: "To fully realise an app's audience potential, it is highly recommended that you work with an third-party mobile analytics company. This will allow you to independently verify impressions, clicks and in-app actions by your users and also to monitor and compare any network or ad platform monetisation data and reports you receive."

Rosenfelder says games firms have another advantage in that they know one crucial thing about their audience: they are active gamers.

"This means there is a good chance they will be interested in ads of other gaming apps," he explains.

"Also, you can use your inventory to cross-promote any other apps you own. Assuming the vertical is the same, there is already a great fit so these ads can be very effective and help monetise your business as it's free promotion.

"However, the other side of this sharp segmentation is cannibalisation. After all, you don't want to send your players to your competitors. It's a fine line so make sure you're not running ads of your competitors, but rather of games that are part of a different gaming segment – although not too different as you'll use your segmentation edge."

SEEKING SUPPORT

Nash also warns that, while understanding your audience is crucial to using mobile ads efficiently, it is unwise to focus too much on a niche group or certain findings.

"Mobile marketers may favour specific targeted campaigns and whilst these can be effective they are often costly. Using direct and cross-promotional methods also benefit like minded developers facing the same obstacles as you," he says.

THE DEVELOP GUIDE TO MOBILE ADVERTISING

When talking to ad networks and platforms, devs will encounter a whole new world of jargon and buzzwords. We've broken down the most important ones:

Programmatic advertising
An automated process that fills ads slots within your game by targeting certain demographics and selecting the ads best suited to them

Real-time bidding
Mobile ad spaces are bought and sold based on how many impressions or clicks they get via real-time auction

Interstitial ads
Full-screen ads that cover the interface of their host game or app. Most commonly used at natural transitions, e.g. between levels, and force users to interact

Native ads
Paid advertising where the ad matches the presentation of the app or game, making it blend in with the rest of the title. Similar to in-game advertising.

Rewarded ads
Consumers are given virtual items, usually currency or consumables, if they choose to interact with the ad or view a full video ad. Also known as incentivised ads.

CPC
Cost per click, i.e. the amount of money the publisher/developer receives when users click on them.

CPL
Cost per lead, i.e. the revenue earned by the publisher/developer for creating a lead for an advertiser.

CPI
Cost per install, i.e. the amount of money the publisher/developer receives when users install the advertised game or app.

CPA
Cost per acquisition, i.e. the money spent to acquire new users.

Attend any mobile or casual games conference and you'll find the expo area packed with mobile marketing platforms, ad agencies, optimisation solutions, retention specialists and all manner of firms promising they have the answer to all your problems.

It can be difficult to establish what each offers over their rivals, and many will no doubt seek to become your sole ad provider, but Rosenfelder actually recommends casting a wider net: "Partner with multiple networks to maximise your reach and demand for your inventory. Gaming specific networks like Chartboost, Playhaven and Unity are proven sources, but there are many others that deliver solid retention and significant scale.

"Since app performance is a must, you'll also want to minimise the number of SDKs in your app. One way to do this is to work with mediation platforms that manage supply from multiple sources."

Nash adds that these companies can also help in spreading the word of your own title: "Advertising is one of the fastest, social, and most efficient ways of raising awareness, but the traditional sense of advertising is also very expensive. The App Store and Google Play are reported to have 3.1m apps hosted between them as of July 2015 – so without advertising it's almost impossible for a game to stand out from the rest.

"Whilst some may maintain the standpoint that TV advertising establishes a more meaningful connection with the consumer, it's important to establish where your advertising efforts will be most useful. If you're looking to raise awareness amongst the mobile community, your best chance of acquisition is most likely going to be via mobile applications. Think about who your target customers are, where they spend their time and how you're going to reach them."

EXPERT ADVICE

The biggest danger, of course, is driving your mobile ad strategy to the point where you're almost actively pushing users away. Your players are only valuable while they continue to play your game, so fitting the ads around their wants and needs is crucial.

"Let the users make their own decisions whether to watch ads or not," advises Fang. "For instance, when the gamer fails a level, there might be an options either to start that level from the very beginning or to watch video ads and move forward. In this case, ads are welcomed by audience.

"Also, do not advertise too early. Wait two to three days after the installation before demonstrating the first ads so that you don't affect the user experience."

Rosenfelder adds: "Make sure to set a frequency cap because any dent in the user experience creates a risk in losing your users that you worked so hard to acquire. Try using more native and less interruptive interstitials. Finding a way to embed native ads within your game without disrupting the game is a challenge, but it can't be done."

He cites the example of a football game with banners around the pitch. These don't interrupt the game experience and are guaranteed to be seen by players.

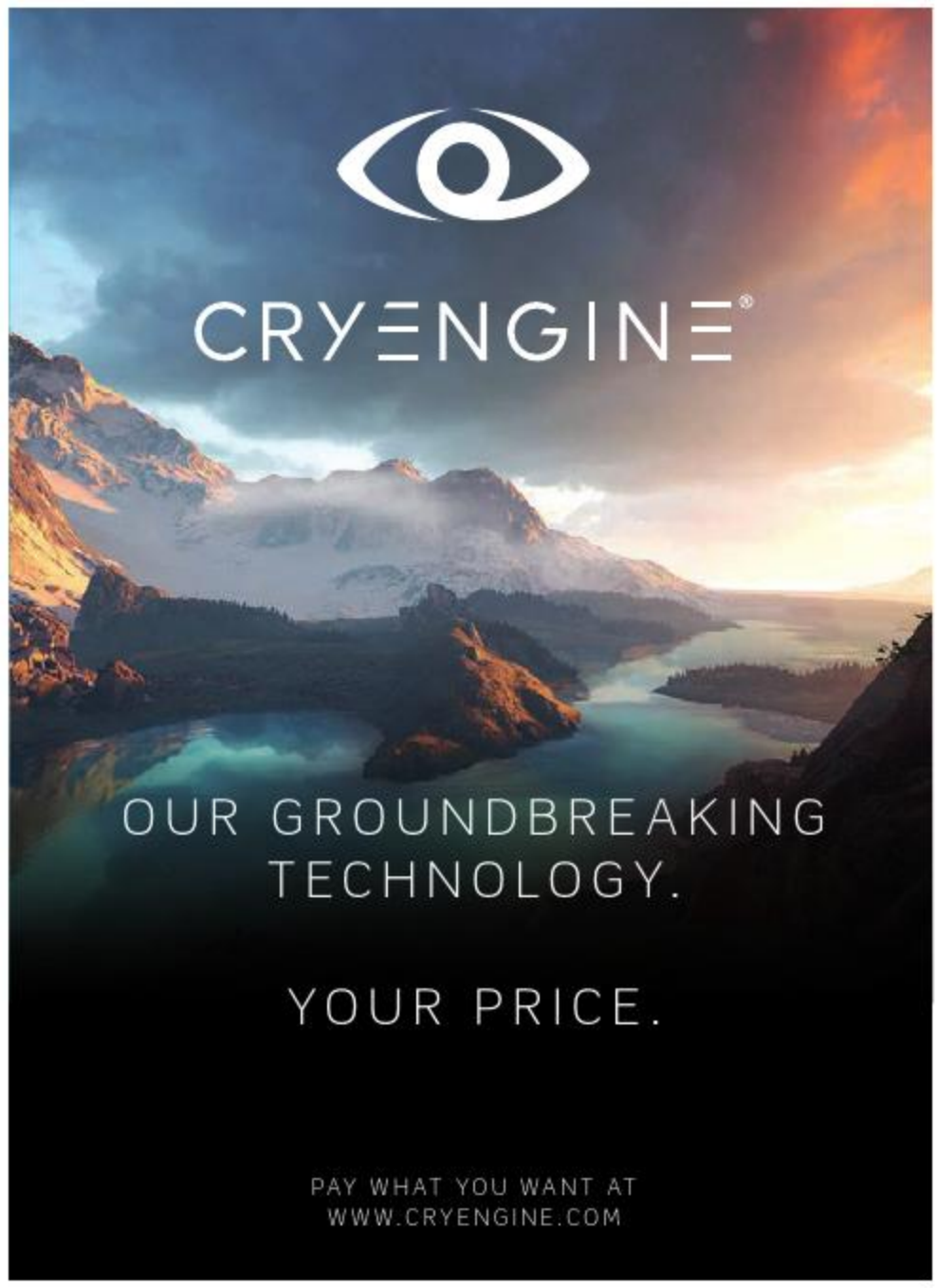
Tapdaq's Nash, meanwhile, reminds mobile devs that advertising in their games will be "a different beast" to online titles.

"It's not simply about transferring your online adverts to mobile. It's vital to ensure that you're optimising your adverts for mobile," he says.

Lucas concludes that the key to keeping your audience happy is ensuring any ad content is relevant to them.

"If a gamer sees ads they deem suitable to them, they will be more accessible," he says.

"This is where a developer needs to fully understand their audience demographics and ensure they choose monetisation partners and networks wisely." ■



THE HARDLIGHT TOUCH

With Sega doubling-down on its pledge to mobile, Chris Southall – GM for the publisher's Hardlight studio – tells **Matthew Jarvis** about bringing two of gaming's best-known series to smart devices

When Sega announced earlier this year that it would be restructuring to focus on mobile and PC, eyebrows were raised. Whether with *Sonic the Hedgehog*, *Yakuza* or hardware such as the Mega Drive and Dreamcast, Sega has been associated with console development almost as long as modern consoles have existed.

Yet, the company had a trick up its sleeve in the form of studio Hardlight, which was founded back in 2012 to bring Sega's best-loved franchises to mobile. It has since transformed both *Sonic the Hedgehog* and *Crazy Taxi*.

"We look for something which is true to the original DNA of the IP which translates well to a mobile device – both in terms of the inputs and the play patterns on such devices," says Hardlight GM Chris Southall. "For example, with *Crazy Taxi: City Rush*, the obvious choice would be to execute a driving simulation on mobile. But speaking with the original game director, Kenji Kanno, his opinion was that the game was as much about pace and fun, and showing off to friends – so we focused on that first and foremost, spending time on the controls and experience, not on a physics sim."

CONSOLE, CONDENSED

Hardlight found its feet with *Sonic Jump*, a remake of an older mobile title that focused entirely on Sonic's leaping ability. The studio's other line of *Sonic* mobile games – *Dash* – likewise concentrate on one aspect of the his movement: namely, his speed. It's a tactic that Southall sees as key to the franchise's successful translation into the mobile world.

> **The meta-game becomes essential if you want to retain players longer than a few days.**
> *Chris Southall, Sega Hardlight*

"Similar to a lot of the classic Sega arcade games, a tight and simple core action mechanic has to work very well – with extra nuance or extra mechanics built off that," he observes. "Unlike a coin-op, the meta-game around that core experience becomes essential for mobile if you want to retain players longer than a few days."

Perfecting bitesize gameplay is common sense to any mobile dev, but Southall points out the difference between the condensed full-bodied origins of Hardlight's mobile offerings and those from studios with no console heritage.

"For something like *Crazy Taxi: City Rush* or *Sonic Dash*, we'd expect one-to-three sessions of one-to-three 'runs' a day: 30 to 90 seconds each, in a setting allowing some focus," he suggests. "We have to be pick up and play – it's not desirable to have a wide choice of tasks to ponder over. This means you are better doing one thing well, rather than a broad set of things – in turn, this controls your budget and means you're generally more limited – at least until initial launch."

FAMILY TIES

It may have started off as a studio dedicated to building upon the work of others, but Hardlight has quickly struck out on its own in the world of mobile.

"*Sonic Jump* really just allowed us to start to understand the technical and practical requirements on mobile," Southall recalls. "*Sonic Dash* was frankly truer to the IP and core mechanics and, as our first F2P title, showed us how a tight experience pitched correctly can access a huge audience."

As for what comes next, Southall says that Hardlight's future continues to lie in expanding Sega's portfolio in new ways.

"It's been bounced around – and, arguably, out – before, but we're seeing some interesting companion apps working and bringing in revenue, so we could start seeing more mobile spin-offs which talk to and interact with their bigger counterparts," he predicts.

"I'm also curious to see if we get more triple-A spin-offs for mobile titles too, and approaches from mobile free-to-play service-led games translating back to console, where the platforms allow." ■

GRAM'S GRAND SLAM

Mobile puzzler Merged catapulted Gram Games from obscurity into the limelight. Chief people and culture officer **Emre Tunçbilek** talks about taking the Turkish studio to the global stage

Location: Istanbul, Turkey
Best known for: Mobile puzzle games *1010*, *1010 World* and *Merged*, as well as the Apple TV exclusive title *Lumino*
Web: www.gram.gs
Email: other@gram.gs
Twitter: @GramGS
Facebook: www.facebook.com/GramGS

Your studio struggled for its first couple of years of existence, up to the release of *1010* in 2014. What were the key lessons you learned from this difficult period?

Iteration and quick-to-fail processes are key. It is important to have takeaways from failed products. From each game we learned things about user behaviour, retention and player funnels that we incorporated into the next title.

Merged was launched earlier this year to great success. What was the inspiration for the game?

Merged was the result of our culture and organisational processes. We do rapid prototyping. Each week, the entire team shares game ideas and development is carried out for the most popular ideas. These ideas are then tested with players and the ones with strong indicators are promoted to full production.

Gram was the first Turkish company introduced at Google IO. What is the current state of the development industry in Turkey?

It is in its infancy, with few big name developers – but a lot of raw talent.

There are challenges. Turkey is distanced from key markets and publishers – as such, it is challenging to maintain the necessary relationships to discern visibility. It is also difficult to find funding to enable your game to take off. The local market isn't favourable; IAP and ad monetisation from Turkish gamers alone is low, unless you dominate a genre. While the creative and developer talent is amazing, certain roles necessary for success are significantly lacking.

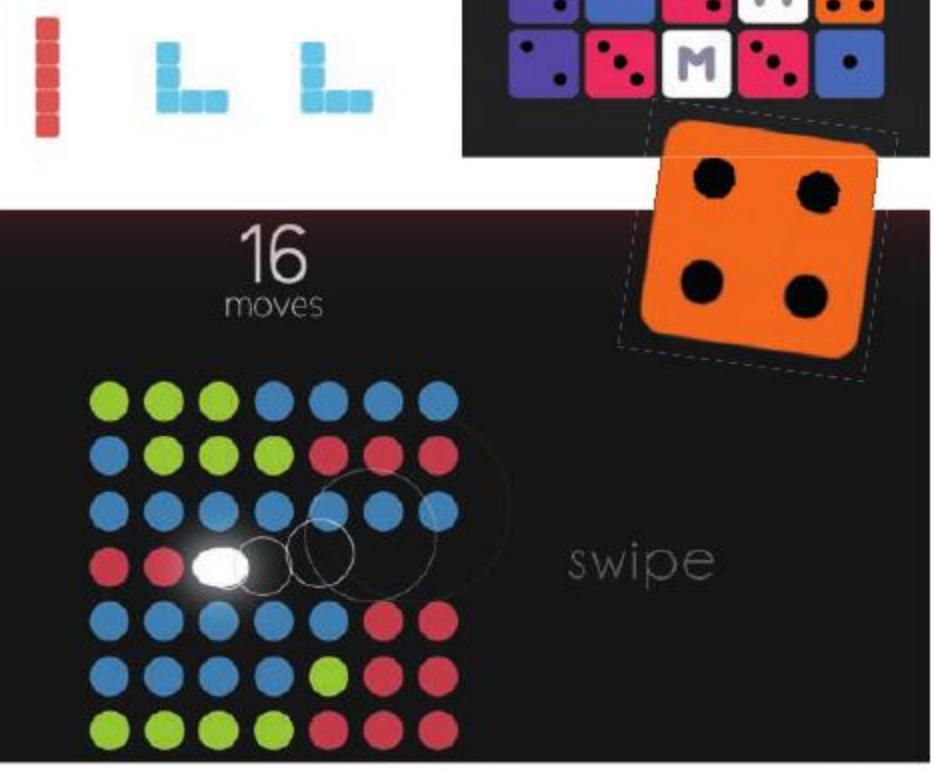
We are aware of the challenges that are facing indie developers in Turkey, and subsequently have established the 2Tons accelerator program through which we support developers in bringing their games to market. We provide our expertise in domains that they may be missing. We also do their initial marketing via our games. There are no contracts and therefore no strings attached.

What's unique about Gram?

With a lot of other companies someone might get stuck working on the same things all the time. We instead have a flat system where everyone has input on various projects and in different ways.

We also change everything on a Friday; we call it Prototype Fridays, when everyone stops whatever they are doing and works on an idea for the entire day. We lose a day of production, but the thrill of developing something under time constraint and the diversity of ideas result in tremendous return on our investment.

One of the most remarkable things about Gram Games is its 100 per cent per cent retention rate. Since 2012, we've had bad days and good days but since the beginning nobody has ever left by taking an offer from another company. ■



Your Localization and
Player Support Partner

MOGI Group International

Still not in there!

www.mogi-translations.com

MOGI Group International

Your Localization and
Player Support Partner

jobs

YOUR MONTHLY GUIDE TO THE BEST CAREER OPPORTUNITIES

MOVERS & SHAKERS
The latest hires at Coconut Lizard, Nordeus and more
P26

RECRUITER HOT SEAT
OlliOlli dev Roll7 is on the hunt for fresh talent
P27

GET THAT JOB
F84 Games' Sean McNamara on what it takes to be a lead designer
P28

'THE REAL BENEFIT OF WORKING IN MOBILE IS THE VARIETY'

The mobile industry is looking for multitasking devs, able to work on a diverse range of projects

The mobile gaming boom has opened up fresh opportunities for developers, but it has also led them to change the way they should present their own experience when applying for a job in the sector.

"Designers with data skills are becoming the real force to be reckoned with," says Tom Murphy, head of human resources at Australian studio Halfbrick. "They can assess user behaviour in games to identify unused or clunky areas of the UI, identify the elements of a game that users want to engage with, and make design decisions around them.

"There has been a nice upturn in multi-skilled operators. It's always great to see a coder who can flesh out their vision with appealing graphics, or an artist who weighs in on design decisions from a visually aesthetic point of view rather than a systemic one."

Mobile developers are expected to be able to work on more diverse tasks than 'traditional' developers, confirms OPM's PR and marketing manager Nathan Adcock.

"A generalist skillset is much more desirable and useful to a mobile studio when compared to someone who has become an expert in one defined area," he explains. "Because of this we find that a lot of people who work in the console space do not want to move too far away from their specific discipline.

"A real benefit for working in the mobile space is the variety in projects and the chance to develop untapped genres. People in the mobile space do not tend to get stuck working on the same project for five years in a huge team."

Mobile herefore offers devs an opportunity to do their job differently.

"We're definitely seeing the wish lists of lots of mobile devs focusing on a handful of key areas," states Genie Todd, marketing executive at Aardvark Swift. "Server programmers with previous online/mobile experience and strong Java and Scala skills, game designers with strong game economy, monetisation and retention experience, and finally experienced UI/UX Artists with awesome portfolios and experience in the mobile market."

> **A generalist skillset is much more desirable and useful to a mobile developer compared to an expert in one area.**
> *Nathan Adcock, OPM Jobs*

Deirdre McCann, senior director of recruiting at King, confirms certain skills are sought more than others.

"Like most organisations, we have to work very hard to find great C++ and Java developers. This challenge is made more difficult as we also look for industry experience too.

"We have seen a huge increase in demand for data scientists around the globe. We are lucky in that we offer a great proposition for people to join King due to the amount of data we handle - five petabytes!"

Adcock concludes: "In general mobile developers work in smaller teams and have much more influence on the games they are making. We've found that some of the more experienced developers rediscover why they wanted to make games in the first place." ■

MOVERS AND SHAKERS

The latest high-profile hires and promotions

COCONUT LIZARD

Two new senior programmers have joined Coconut Lizard: **TERENCE BURNS** and **JOE TIDMARSH**, both coming from Epic Games and Pitbull Studio before that.

Epic Games acquired Pitbull, a company founded by Robert Troughton in 2010, in August 2014. Last year, Troughton left to start Coconut Lizard.

"I've worked with Terry and Joe for quite a few years now – they're among the very best in the industry," Troughton said.

"Our bar at Coconut Lizard is incredibly high, we're hiring only the best of the very best."

NORDEUS

DARYL CLEWLOW has been hired by Nordeus as head of art. He joins from NaturalMotion, where he had a similar role and worked on *Clumsy Ninja*, *CSR2* and *Dawn of Titans*.

Clewlow has been working in the development industry for 13 years, for the likes of Free Radical, Core Design, Rebellion and Blitz Games.

N3TWORK

The mobile developer and publisher has appointed **DAN BARNES** as chief revenue officer. Barnes joins from Zynga's NaturalMotion studio in the UK, where he was in charge of acquisition and monetisation.

"Dan has had a front seat at firms that built the foundation for mobile revenue practices," said N3twork's CEO Neil Young.

ZYNGA

Former EA executive **FRANK GIBEAU** has become Zynga's new CEO, after joining the firm's board of directors last year. He replaces Mark Pincus.

Pincus commented: "Frank is a seasoned leader with the experience to navigate the kinds of challenges we face on a weekly basis."

PRODUCER OF THE MONTH

This month, we speak to Bossa's **Herb Liu**, producer of the upcoming Worlds Adrift

Tell us about your career to date.

I tried my hand at a lot of different careers before entering the games industry: finance, internet advertising, trading, and education.

The project Bossa hired me for ended up becoming *Twisted Manor*, a great little point-and-click educational game for our US partner Amplify.

After that, I worked on the release for an iOS educational game called *Twelve a Dozen*.

Sometime in the middle of all that, we had a game jam where the prototype for *Worlds Adrift* was made. Ever since we greenlit it, I've been heading up this really exciting project.

How did you end up at Bossa?

You know, everybody has a story about how a tiny little bit of random luck had a huge butterfly effect on their life, and that's basically the story of how I joined Bossa.

I was at a job fair where Bossa was only advertising for a server Java coder, so I didn't really plan on talking to them.

I happened to be waiting in line to talk to a different company right next to them, when my friend came up to me, so I stepped out of line. The *Surgeon Simulator* trailer on Bossa's big TV caught his eye, and so we started talking about the game.

This caught the attention of Henrique, our CEO, who was manning the stand. We had a chat about video games, tabletop games and Google Wave of all things – a few weeks later, I joined Bossa.

Describe a typical day for you.

Usually the mornings start with re-evaluating the project's short-term priorities, and planning my day. We'll have our stand-up meeting, and then it starts to get crazy.

I usually catch up throughout the day with various members on the dev team. My main priority is to keep everything coordinated, and everybody communicating and working as efficiently as possible, toward the same goal.

What advice would you give someone looking to become a producer?

A big part of being a producer is being objective and honest with yourself about decisions. It's a tricky thing to balance the passion you need for your project with the detached mindset you have to have to make the right calls, admit your own mistakes, think about things from a different vantage point, and take the best path ahead. ■

In association with

Testronic
Our assurance is your guarantee

RECRUITER **HOT** SEAT

Director **Simon Bennett** talks about the positions open at Roll7, the BAFTA Award-winning studio behind stylish skateboarding series OlliOlli, Not a Hero and a yet-to-be-announced new project

What differentiates your studio from other developers?

I guess Roll7 is a bit of an anomaly in the industry. We were formed as a sister company to a multimedia training provider in 2008. Our background was actually teaching video game design and development (alongside other disciplines) to young people, then working on collaborative projects, third sector client projects and, finally, our own IP in 2012.

Nowadays I guess you could call us a micro-studio. We're not fully independent, as we work with a number of publishers to maximise the value of our IP. Our games are based on simple controls and addictive hooks – we try to focus on gameplay over anything else. A big differentiator from May 2015 is that we are fully remote and new staff get to work at home.

How many staff are you looking to take on?

We are currently up and running in pre-production on a very exciting new and as yet unannounced IP. We are looking for about five key people.

What perks are available to working at your studio?

We are a BAFTA and Develop Award-winning studio with three hit games under our belt. Our next game will be our biggest, most ambitious and exciting project to date and, all going well, is going to make a big impact. This is an opportunity to join a small-scale award winning team to push the boundaries of British gaming on a world stage, as well as help shape an exciting and original new IP.

Roll7 are based remotely so you get to work from home, with ad-hoc trips to our central London workspace for meetings. We pay in-line with industry standard wages, so you basically get to take home more based on travelcard costs or petrol. There is the opportunity for some flexible working.

> **This is an opportunity to join a small-scale award-winning team to push the boundaries of British gaming on a world stage.**
>
> *Simon Bennett, Roll7*

What should aspiring devs do with their CV to get an interview?

Make sure you have a showreel if it's a art role, ensure its up to date and keep it simple and relevant to the role.

Who was the best interviewee you have ever had?

The best interviewee we had was our lead artist for *OlliOlli2*. He delivered on a brief prior to the interview, so we knew he was going to be good. He was calm, clear and to the point, and didn't overstate his experience or over-promise. As such, he was our easiest decision for a role.

And who was the worst?

Someone that interviewed for a programming role with us. They were brash and over-confident – when given a task, it was clear that it was all hot air and bravado. I guess its about transparency on both sides: we are honest about the reality of the role – we want interviewees to be as open as they can.

Our interview process is pretty comprehensive, so we will be tough, but its only to ensure that we get the best for us and for you. ■

CURRENTLY HIRING

Company: Roll7
Location: Work from home, but applicants must be UK-based
Hiring: For immediate start: a lead technical artist and a lead network programmer. For a July 2016 start: character artist, texture artist, animator, environment artist, AI programmer
Where to apply: www.roll7.co.uk/#!jobs/cbv0

Follow us at: **@develop_jobs #DevelopJobs**
To see our full jobs board, sign up for our jobs newsletter or to post your own job ads, visit: **www.develop-online.net/jobs**

GET THAT JOB

This month: Lead Design with F84 Games' Sean McNamara

What is your job role?
I oversee the creation of games from concept to release. It is my responsibility to ensure that every aspect of our games that players come into contact with aligns with the overall vision for the project and to communicate this vision to the rest of the team.

Working in an indie studio like F84 means that I also do a lot of the hands-on design work and make a majority of the choices regarding how our games will look and play.

What qualifications do you need?
For game design in particular, an understanding of what makes a game fun for your target audience is important.

Great writing and communication skills are necessary too, as the job often requires creating documentation that clearly defines the different rules and mechanics that will be in the game.

In addition, the ability to work in a team environment is critical. You are required to constantly collaborate with every department on the dev team as the game goes through production.

How would someone come to be in your position?
There are a number of ways to pursue a career in game design.

In my case I went to art school, worked relentlessly to build my portfolio, and eventually landed an internship working on *Transformers: Revenge of the Fallen*.

From there, I worked on an Unreal 3 mod at school that I was able to showcase at my portfolio show.

My boss and CEO of F84, Jeff Hardy, got to play the mod. A week later, Jeff offered me a position working on *Man vs. Wild*, and I have been working here at the studio ever since.

> **Game design is awesome. You get to think up whole worlds in your head and then realise them.**
> *Sean McNamara, F84 Games*

If you were interviewing someone, what would you look for?
Someone who is confident in his knowledge of all things game-related; can the applicant clearly articulate what their favourite mechanic of their favourite game is?

Someone who can fit into our team environment is vital as well, as the work space here at F84 is fast-paced and extremely demanding.

What opportunities are there for career progression?
Design can also lead to different departments such as production or even engineering. It really comes down to what you are passionate about.

Why choose to follow a career in your field?
Game design is awesome. You get to think up whole worlds in your head and then realise them.

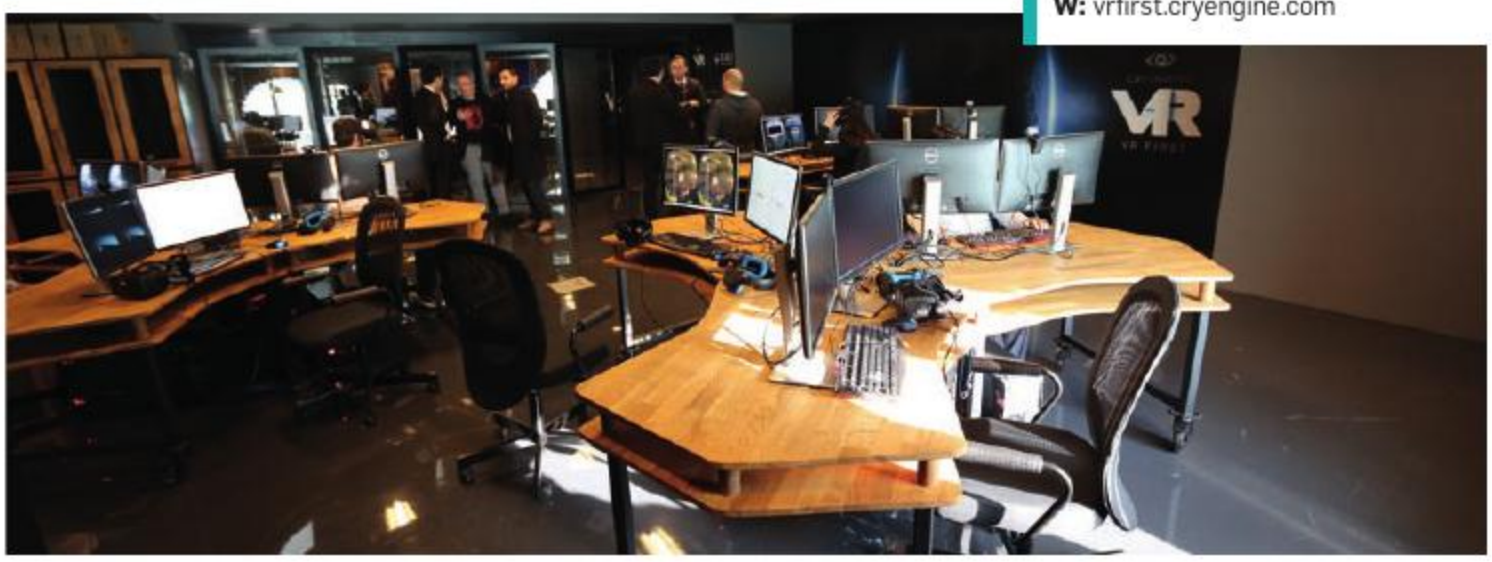
For *Stan Lee's Hero Command*, I got to help develop a brand new hero adventure featuring three original hero characters – and then pitch the idea to the legendary comic book icon himself. ■

SKILLS AND TRAINING

This month: Crytek's VR First Labs target students and developers who wish to learn more about the ins and outs of virtual reality

Overview: German developer Crytek is planning to open VR development labs around the world, thanks to local academic partners. The first lab opened at Bahçeşehir University, in Istanbul. All labs will provide free software and hardware.

W: vrfirst.cryengine.com



"VR First is an initiative to encourage grass-roots VR development around the world," explains Ferhan Ozkan, senior business development manager for partnerships and alliances at Crytek.

"We work together with universities to create VR First Labs, which will offer a professional environment and first-class VR tools for students and developers.

"We also want to form a global network of VR developers and provide a platform to exchange ideas, showcase achievements and build business relationships.

"VR First is going to be a pipeline for aspiring developers to get started in VR development, as well as to get their project out there and in the right hands."

With this initiative, the German developer wants to help people who would like to work with VR "but might be intimidated by its requirements or aren't quite sure where to start," Ozkan says.

"We take care of the entry barriers by providing high quality VR tools for free and introducing them to the scene.

"All the Labs are equipped with cutting-edge hardware and include free source code access to CryEngine, which supports VR out of the box," he adds.

With the VR First Labs, Crytek hopes to create 'go-to places' and 'know-how centres' in various regions for VR developers. To achieve this, Crytek will be signing local partnerships.

"We'll be looking to establish ties with existing VR communities and we are in the process of forming an advisory council with industry talent that can provide mentorship for young developers," Ozkan reveals. "Lastly, we are working with academic partners like Bahçeşehir University in Istanbul, which will become home to our Labs."

Crytek will announce new VR First Labs and partners soon. ■

WWW.INNOGAMES.COM

InnoGames

SUMO
DIGITAL
SUMO
WANTS
YOU
Sumo are looking for world class talent across all disciplines for both our new Nottingham Studio and our HQ in Sheffield.
Send CVs and Showreels to recruitment@sumo-digital.com

TUTORIAL: CORTANA IN GAMES
How to add voice commands
P38

WRITTEN IN INK
80 Days studio Inkle releases its Ink text engine for free
P42

THE DEVELOP POSTMORTEM
We take a look at the origins of Clint Siu's mobile debut, *Prism*
P44

20 MOBILE MARVELS

Develop rounds up the top tools and tech, from beautiful engines and rigid infrastructure to sumptuous audio and eye-watering art, designed to get your smartphone or tablet game on the road to success

SpeedTree for Games

Company: SpeedTree
Price: $19 per month
Platforms: Unity, Unreal
Try it yourself: speedtree.com

The Develop Award-winning vegetation modelling tool comes complete with add-ons for both Unity and Unreal, allowing mobile devs to either build their own flora or utilise the software's library of pre-made assets. The tech features tree resolutions featuring approximately 1,000 triangles specifically optimised for use on lower-performance platforms such as smartphones.

Check out: Madfinger Games' zombie-shooter *Unkilled* made use of SpeedTree's Unity plug-in to populate its world with some plant life.

Perforce Helix

Company: Perforce Software
Price: Free up to 20 users, from $320 per user afterwards for a 12-month subscription
Platforms: iOS, Android
Try it yourself: perforce.com/helix

Helix's versioning software features a number of helpful features to track and scale growth. These include code stability metrics, the GitSwarm ecoystem and threat detection. The platform's 20/20 Program allows developers to use the software freely for up to 20 users or workspaces, but features no upper limits on users, transactions or data. Perforce SDKs are available in C/C++, Java, .NET, Ruby, Python, PHP and more. Integration with IDEs, design and CAD tools, and product lifecycle tools is supported out-of-the-box.

Check out: Perforce helped the team behind *Legacy Quest*, the free-to-play roguelike RPG from Socialspiel and Nexon, to branch, build and merge new releases of the game across iOS and Android.

Unreal Engine

Company: Epic Games
Price: Free (with five per cent royalty after $3,000 quarterly product revenue)
Platforms: iOS, Android
Try it yourself: unrealengine.com

Highly regarded for its production values across PC, console and mobile, Epic's Unreal Engine offers a complete C++ engine and editor source code. To get started quickly on mobile, a range of ready-made assets and tutorials are available through the marketplace. Recently-added mobile features include dynamic shadows, dynamic point lights and decals, as well as support for the cloud, IAPs and push notifications on iOS.

Check out: Rodeo Games' *Warhammer 40,000: Deathwatch* is one of the first iOS titles built with Unreal Engine 4 and a visual treat on mobile.

Yebis

Company: Silicon Studio
Price: On application, royalty-free
Platforms: iOS, Android
Try it yourself: siliconstudio.co.jp/middleware/yebis/en

Alongside providing visual effects for film studios such as Pixar, Yebis can be utilised by mobile devs to reproduce life-like lens effects in 3D images, implementing realistic backlighting, focus and noise.

Check out: Stainless Games used Yebis in its virtual *Magic: The Gathering* card game *Magic Duels* to boost the visuals of the iOS and PC/console title.

Wwise

Company: Audiokinetic
Price: Varies, free for games that use under 200 audio assets
Platforms: iOS, Android, Windows Phone
Try it yourself: audiokinetic.com

Studios looking for a little more 'oomph' on smart devices can quickly and cheaply implement higher-quality audio in their titles using Wwise. The tool integrates with Unity and Unreal, plus Amazon's new Lumberyard engine.

Check out: PopCap audio lead Jaclyn Shumate utilised Wwise to keep mobile spin-off *Peggle Blast*'s audio content under 5MB on iOS and Android.

NextPeer

Company: Nextpeer
Price: Free (ad-supported), $199 per month (ad-free up to 100K MAUs)
Platforms: iOS, Android
Try it yourself: nextpeer.com

NextPeer aims to make mobile multiplayer easy, with a cross-platform layer that combines a social feed and in-game footage.

Check out: Nextpeer helped first-time dev Tom London create racer *Drift 84* in under six months.

Unity

Company: Unity
Price: Free (Personal Edition), from $75 per month (Pro Edition)
Platforms: iOS, Android, Windows Phone, Tizen
Try it yourself: unity3d.com

Unity opens up a one-click route to deployment on a range of mobile platforms for devs. It's bolstered by the 3D and 2D tools, workflows and healthy ready-made asset store of its PC and console counterpart, as well as monetisation and retention services ideal for mobile creators.

Check out: Fireproof Games built the gorgeous graphics and intuitive controls of its acclaimed trilogy of *The Room* puzzle games with Unity.

Substance Designer

Company: Allegorithmic
Price: $149 (Indie licence), $590 (Pro licence)
Platforms: Unity (native), Unreal (free plugin)
Try it yourself: allegorithmic.com

Allegorithmic's node-based texturing tool helps mobile creators keep things in order by making use of a non-linear workflow. The software's real-time PBR viewport matches any game engine with custom shaders.

Check out: The *Asphalt* series uses Substance to keep file sizes down.

Stingray

Company: Autodesk
Price: $30 per month, $240 per year
Platforms: iOS, Android
Try it yourself: stingrayengine.com

Stingray makes it easier for devs to test gameplay on mobile by maintaining a live link between platforms. The latest update adds better workflows for Scaleform Studio and support for iOS Metal.

Check out: Arrowhead's Vita title *Helldivers* was made with Stingray.

Cloudant

Company: IBM
Price: On application, with monthly usage pricing also available
Platforms: iOS, Android
Try it yourself: cloudant.com

IBM's Database-as-a-Service makes use of the cloud to allow studios to easily scale up the infrastructure for their games. Up to billions of transactions can be handled daily, with mobile data replication and sync and analytics provided to keep devs on top of their title's expansion and allow them to quickly iterate and prototype. Cloudant's Data Layer for Mobile Applications is free to begin with, with devs paying as they grow for $1 per month.

Check out: Hothead Games uses Cloudant as the background data layer for its *Big Win Sports* series of mobile titles.

Marmalade

Company: Marmalade
Price: From free, moving up to monthly and annual subscriptions for on-device debugging, support tickets and more
Platforms: iOS, Android, Windows Phone, Tizen, Blackberry
Try it yourself: madewithmarmalade.com

Marmalade's titular tool boasts support for a wide range of platforms out of the box, making it suitable for devs wanting to bring their game to as many devices as possible. The Juice tool allows native iOS games to be deloyed to Android without the need to rewrite code. Extensions are available to implement extra services such as Google Play and App Store billing, as well as Facebook and Flurry.

Check out: EA used Marmalade to bring mobile spin-off *SimCity BuildIt* to iOS, Android and Amazon's Appstore.

GameSparks

Company: GameSparks
Price: From free for the first 10,000 MAU each month
Platforms: Unity, Unreal, Marmalade, Cocos2d and more
Try it yourself: gamesparks.com

Reducing the time and money spent on introducing server-side functionality, GameSparks' backend service offers a library of social and monetisation mechanics to boost retention and revenue, as well as support for cross-platform multiplayer.

Check out: GameSparks helped Pixel Toys streamline the creation of *Warhammer 40,000: Freeblade* and implement multiple server-side features.

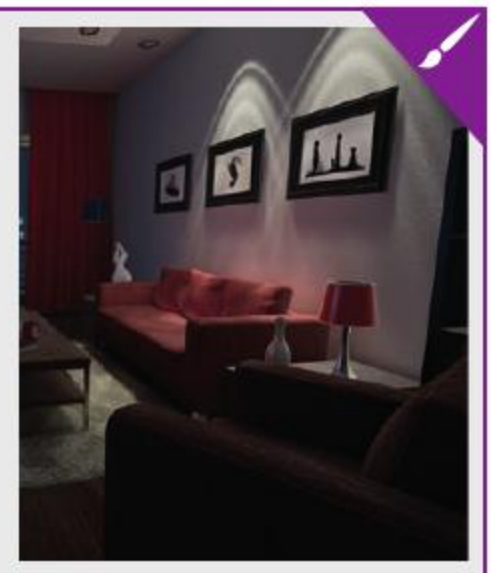
GameMaker: Studio

Company: YoYo Games
Price: Free, from $150 (Pro), $800 (Master Collection)
Platforms: iOS, Android, Windows Phone, Tizen, Amazon Fire, PS Vita
Try it yourself: yoyogames.com/gamemaker

A drag-and-drop interface and the C-based programming language makes GameMaker suitable for amateur devs and established studios alike to quickly build prototypes and full releases. Support for in-app purchases, analytics and user engagement comes ready to go, while new third-party libraries and SDKs can also be bolted on.

Check out: *Crashlands*, the stylish adventure game from Butterscotch Shenanigans, was built for both mobile and PC using GameMaker.

Enlighten



Company: Geomerics
Price: Free
Platforms: iOS, Android, Windows Phone, PS Vita
Try it yourself: geomerics.com

From vivid cartoon visuals to ultra-realistic graphics, Enlighten scales to bring its illumination tech, including real-time simulation of surface lighting and true dynamic lights, from console and PC to mobile.

Check out: *Angry Birds Transformers* creator Exient has announced that it will use Enlighten in its next big mobile title, set for release in 2016.

MonoGame

Company: MonoGame
Price: Free
Platforms: iOS, Android, Windows Phone
Try it yourself: monogame.net

MonoGame is built around a single framework to make taking a game cross-platform simple.

Check out: *Skulls of the Shogun* came to iOS, Android and Windows Phone, as well as PC and console, thanks to MonoGame.

Maya LT

Company: Autodesk
Price: £25 per month or £185 per year
Platforms: Unity, Unreal, Stingray
Try it yourself: autodesk.co.uk/products/maya-lt

Operating as a more affordable version of Autodesk's full-bodied Maya, Maya LT is ideal for smaller studios looking to get started on mobile. Creators can make 3D models with the software's built-in sculpting and modelling tools, before optimising them for improved performance on mobile. To make things even quicker, a range of pre-made content can be purchased from the Creative Market.

Check out: *Wizard Ops Tactics* dev Phyken Media used Maya LT's low cost to grow its young studio and take on more projects more quickly.

FMOD

Company: Firelight Technologies
Price: From free, for one indie licence
Platforms: iOS, Android, Windows Phone, BlackBerry, PS Vita
Try it yourself: fmod.org

Devs can instantly see the difference high-quality audio makes to their mobile game thanks to FMOD Studio's live in-game mixing. Its 3D sound engine boasts a number of complex control options, including multi-sounds, event sounds and modulation – but wrapped up in an easily accessible UI.

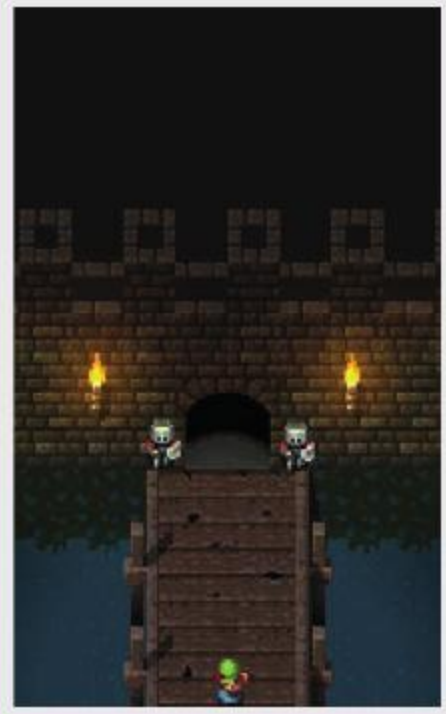
Check out: Telltale's *Minecraft: Story Mode* was developed with FMOD.

Defold

Company: Defold/King
Price: Free
Platforms: iOS, Android, Windows Phone
Try it yourself: defold.com

Defold is a turn-key engine based on Lua, focused on making builds quickly and maintaining performance across multiple platforms.

Check out: Hammarhaja created mobile indie spin-off *Hammerwatch Coliseum* using Defold.



CocoonJS

Company: Ludei
Price: From free
Platforms: iOS, Android, Amazon Fire, Tizen
Try it yourself: ludei.com/cocoonjs/#development

CocoonJS is a fully HTML5 compliant platform built for the purpose of bringing HTML5 projects to mobile without sacrificing performance.

Check out: Ludei's own *iBasketGunner* showcases CocoonJS' ad-hoc implementation of a 3D physics native binding, as well as social network integration.

AppGameKit

Company: The Game Creators
Price: £61 (Standalone), £76 (Beginners Pack), £99 (Premium Pack)
Platforms: iOS, Android, Windows Phone, BlackBerry
Try it yourself: appgamekit.com

AppGameKit works to avoid the problems of mobile device fragmentation by providing a way for developers to code once and bring their title to various platforms. It features its own BASIC script language.

Check out: Fledgling studio Cliogames launched *Space Connection: Atlas* on iPhone and iPad by using AppGameKit's cross-platform features.

DEVELOP'S TOP TIPS: 10 THINGS YOU DIDN'T KNOW YOU COULD DO WITH GRANITE

Graphine Software shares some of the best kept secrets for devs using its texture streaming software

01 USE IT WITH OUR EXISTING GAME ASSETS (EVEN IF THEY'RE JUST TILING TEXTURES)

Granite's virtual texturing system is not only about unique textures everywhere. You can just as well use it for streaming your existing game assets. Granite works with tiling textures and character or prop textures for any visual style or renderer, and handles many individual textures with ease.

02 GET A SOLID FRAMERATE

To tweak the Granite performance budget in our Unreal 4 integration, you can just go to "Edit > Project Settings > Granite" and adjust any limits so Granite stays within budget. Granite allows you to limit the amount of time spent on streaming tasks so you are guaranteed to get a solid framerate.

03 GET MORE OUT OF YOUR MEMORY BUDGET

Granite allows you to configure your caches in a very fine grained way. Whether you want to configure per GPU format or per platform, you can always set exactly how much CPU and GPU memory Granite should use. Granite will then ensure you get the maximum texture quality out of this given budget. It even will automatically adjust the resolution if you went all overboard with textures.

04 USE PREFETCHING AND PREDICTION TO REMOVE NOTICEABLE POPPING

Virtual texturing has come a long way since the first games that were using it. Granite is optimised to get the data delivered on time. It supports advanced prioritisation and prediction schemes to select the best data to load. You can intelligently prefetch data to ensure even difficult cases, such as startup and camera cuts, are handled without any visible popping.

05 OPTIMISE TEXTURE MEMORY AND LOADING

You don't have to adopt Granite right at the beginning of production. Even later into development, Granite can be a useful addition to your toolchain. In particular, it can help with shipping the quality you already got. For example, Larian Studios used it late in the development of *Dragon Commander* to ship the 16k landscape textures they already authored and avoided down sampling them to 8k or even 4k.

06 USE IT AS AN INDIE DEVELOPER

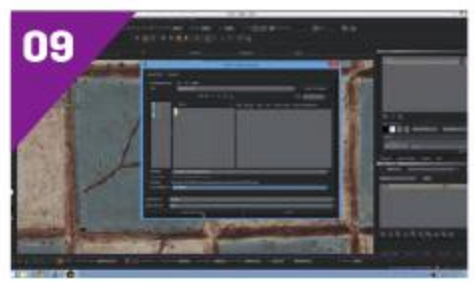
Granite's seat-based plug-in model allows developers of any scale to benefit from Granite. It's already available from $99. Whether you are a one-man shop, a medium sized indie team, or a large studio, Granite offers a licensing model available that suits you.

07 PIMP-UP YOUR LIGHT MAP RESOLUTION

To set this up go to "Edit > Project Settings > Granite" and check the "Use Granite SDK to stream light-maps". After restarting the editor and rebuilding your light maps, you're ready to increase the light map resolution using the "Overridden Light Map Res" setting in the object "Details" panel. By using Granite to stream your light maps, you can easily increase the light map resolution with a factor 2 to 4.

08 STREAM EXOTIC TEXTURES

Granite is not limited to regular 8-bit RGB 2D textures. It can stream any sort of texture data. HDR backdrops, single channel grayscale data, cube maps or displacement maps they can all benefit from a resolution boost using Granite's steaming system.



09 IMPORT YOUR ASSETS WITHOUT ANY CONVERSION WORK

Granite handles almost any file format and asset layout. Are you using BGRA, Y-Axis up or Down, or many different file formats, no problem Granite's tool chain allows you to customise everything during import so you don't have to modify your existing source assets. Granite even supports textures split over several files such as the UDIM format exported by Mari and this without any need to change the mesh's UDIM grid uv-coordinates.

10 USE IT ON ANY PLATFORM OR API

Granite runs on any platform or graphics API and does not need special hardware virtual texturing supports to run. Our recommended platform is DirectX 11.0 level hardware but we support rendering all the way back to DirectX 9 if your application still requires this. And of course, if your hardware supports it, we take advantage of hardware support such as tiled resources and partially resident textures. ■

Book by 27 April for best rates – passes from just £90!

12-14 July 2016

Develop:Brighton

Insight:Inspiration:Networking

DEVELOP:BRIGHTON IS BACK!

Come and join over 1800 developers for Europe's leading game dev conference.

WHAT'S NEW FOR 2016?

New for the Conference

Games Funding Forum
Looking at solutions for financing your game

Games Funding Workshop
Practical workshop to help indies prepare for fundraising

VR Track
Will explore every aspect of VR across all disciplines

New for Networking

Meet@Develop
Online Meeting Planner - don't leave your business meetings to chance, pre-book them and get more out of your visit.

New for the Expo

VR Gallery
The latest games and hardware on display for you to experience

Meeting Zone
More space for business meetings

SESSIONS INCLUDE:

Converting an Established Genre into VR:Pitfalls and Opportunities
Martin de Ronde, Vanguard

From 2 To 13. Growing From Nothing and Working With The "Big Boys"
Aj Grand-Scrutton, Dlala Studios

Lets Talk Narrative with Rhianna Pratchett
Rhianna Pratchett, Award-winning Writer

Don't Forget the Eyeballs:Developing Compelling Games for eSports Audiences
Ian Sharpe, Azubu

Community-driven Game Development Thrcugh Innovative Marketing Analytics
Ammar Jawad, Radiant Worlds

Harnessing the Power of the Crowd to Get Your Game Noticed
Kate Russell, Journalist, Reporter and Author

What Not to Do as a Startup
Ella Romanos, Strike Gamelabs

Tracks: evolve · funding · business · vr · marketing · design · art · coding · audio · indie

Develop is a very important place - it's one of the few developer focussed conferences we have in Europe and that makes it very valuable.

Rami Ismail, Vlambeer

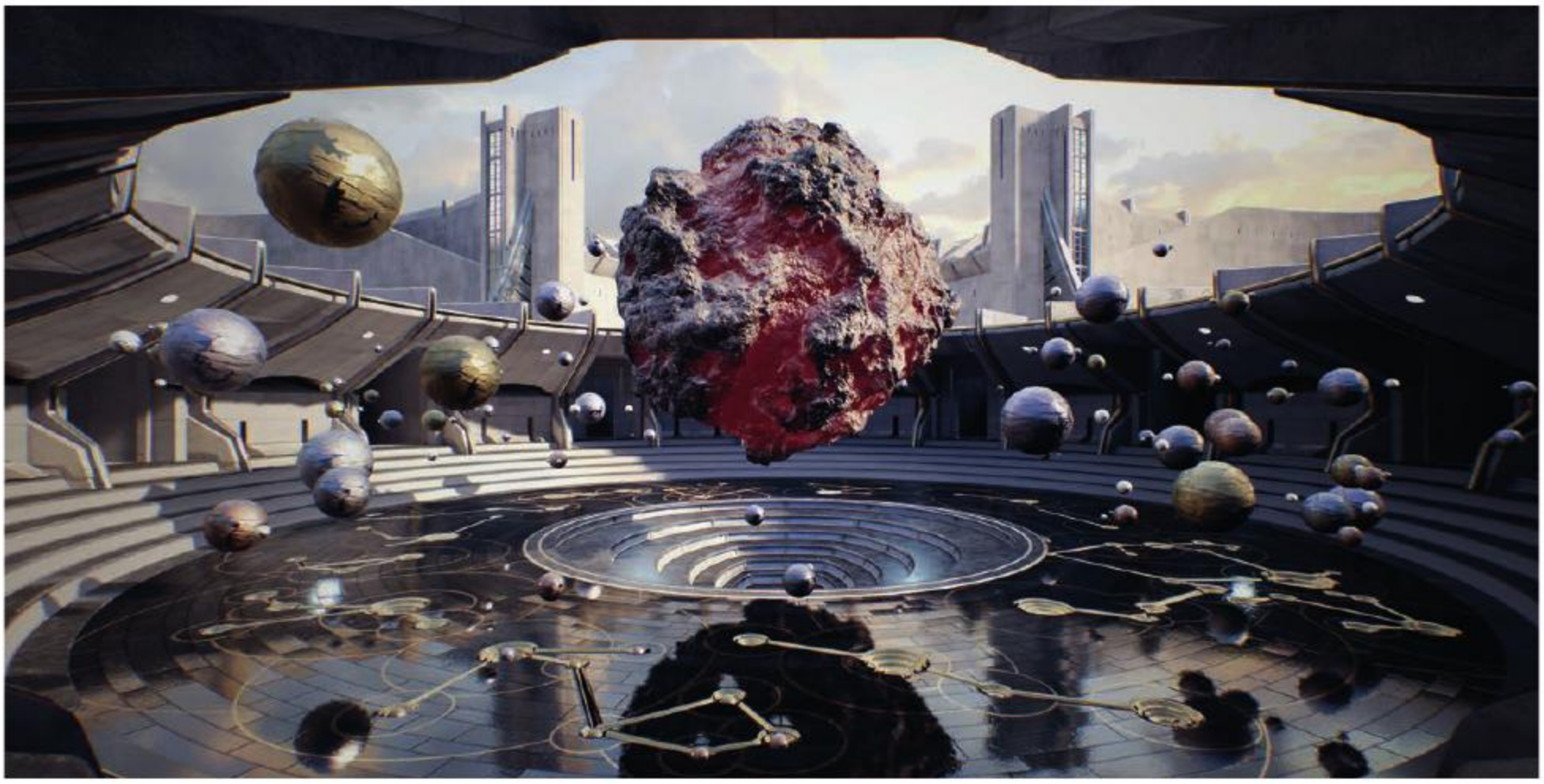
www.developconference.com

Media Partner: develop · Media Partner: EDGE · Media Partner: Pocket Gamer.biz · Media Partner: GAMASUTRA · Media Partner: MCV · Mecia Partner: gamesindustry.biz

Media Partner: gamedev.net · Media Partner: AudioMedia · Media Partner: VR · Media Partner: VRfocus · Partner: ukie · In partnership with: The develop Awards 2016 · Organised by: Tandem:Events

STAR QUALITY

Epic Games explains why Vulkan API marks a new era for mobile developers



At the recent Samsung Galaxy Unpacked 2016 event at Mobile World Congress, Epic Games revealed *ProtoStar*, a real-time 3D experience made with Unreal Engine 4 technology and demonstrated on the new Samsung Galaxy S7.

At the core of this cutting-edge demo is Vulkan API and a shared vision for the future of mobile graphics.

"The new industry-standard Vulkan API brings key elements of high-end console graphics technology to mobile devices, and Samsung is leading the way with the amazing new Galaxy S7," said Tim Sweeney, founder and CEO of Epic Games. "As the first engine supporting Vulkan, Unreal Engine 4 provides a solid foundation for developers joining the mobile graphics revolution."

While creative and technical teams from Epic Games, Qualcomm, Human Head Studios and Confetti were called upon to create the experience, the power of the Samsung Galaxy S7 played a part in bringing *ProtoStar* to life. When it came time to choosing an engine to showcase the device's capability, Samsung looked to Epic to deliver its creative vision.

"We thought about using really high-quality content and Unreal is really well known for its highest visual quality and tasking the GPU in the proper way," said Tae-Yong Kim, VP for Samsung Electronics' mobile communication business. "It was a pretty easy decision for us to use UE4 for our Vulkan demo."

> **As the first engine supporting Vulkan, Unreal Engine 4 provides a solid foundation for devs joining the mobile graphics revolution.**
> *Tim Sweeney, Epic Games*

Unreal's implementation of Vulkan API enables all developers, not just Epic, to create visually stunning, cross-platform 3D content that supports more draw calls, and more dynamic objects onscreen, with faster performance than ever before.

"The idea behind Vulkan is a really robust increase in CPU performance that allows us to render more objects on the screen of the mobile device than we could in the past," said Wyeth Johnson, lead technical artist at Epic.

ProtoStar introduces a slew of new UE4 rendering achievements on mobile, including dynamic planar reflections; full GPU particle support on mobile, including vector fields; temporal anti-aliasing (TAA); high-quality ASTC texture compression; full scene dynamic cascaded shadows; chromatic aberration; mobile dynamic light refraction; filmic tonemapping curve; improved mobile static reflections; high-quality mobile depth of field; and Vulkan API support with thousands of dynamic objects onscreen.

In addition, Vulkan in UE4 gives devs more control on mobile tile-based graphics processors, allowing for very thin and fast graphics drivers, with minimal overhead. Using Vulkan's separate debug layer, developers can more thoroughly and easily inspect code and fix issues.

While the visuals and overall technical achievements of *ProtoStar* and Vulkan are worth being excited about, it's the ability to empower new levels of cross-platform game creation that most excites the team at Epic.

"This is a big bang moment we hope brings the new mobile paradigm to the industry," said Johnson. "We view the deep integration of Vulkan into Unreal Engine 4 as the seed crystal that is going to echo through the industry and create a whole new level of capability for developers." ■

HOW TO INTRODUCE VOICE COMMANDS WITH **WINDOWS 10 AND CORTANA**

Microsoft MVP **Simon Jackson** explains how Unity users can take full advantage of Cortana's voice recognition within their games with the power of Windows 10 and the Universal Windows Platform

GETTING STARTED

With the introduction of Windows 10 and UWP support we can make full use of Cortana's voice recognition, voice-to-text and text-to-speech in games.

This gives your players the ability to launch into a specific area of your game or app, or to provide additional information when launching the game. Some examples could be launching your game via voice, starting your game at a certain screen by saying something like "Game, enter random battle", or providing additional prompts such as "Game, find player X".

Best of all, your game does not even have to be running for these commands to be available; the player simply holds the search button or launches Cortana speech, then speaks their command. Hey presto, your game launches.

I wrote an original article for implementing Cortana and Unity with Windows Phone 8.1 which you can read on the Microsoft UK Developers site. This article is all new and improved, updated for Windows 10 and a few extra bells and whistles.

However, because Unity doesn't have native support for speech or Cortana, we need to build an interop bridge between Unity and the UWP platform to give bidirectional access to all of these and any other capabilities we need.

Here's what the layout of the full implementation looks like: **01.**

In Unity, we need to declare an Interop class to manage the boundary between Unity and the Windows UWP platform. Any data that your Unity project needs from Windows, it will get from this Interop class and any action that needs to be kicked off on the Windows platform will be performed by the Interop class, as shown here: **02.**

This pattern affords a couple of benefits – most notably we know exactly what data we need from the platform and what actions we can perform all in one place (defined as a Contract between Unity and the platforms it's deployed on), regardless of which script or scene uses them.

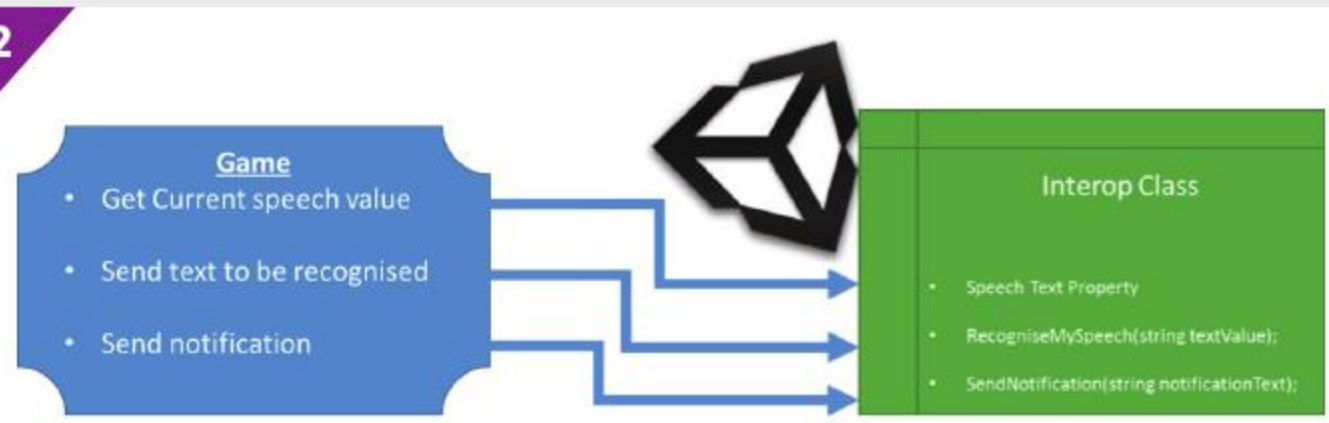
Once we have the behaviours we want in our game, we apply this to our project on the platform. So after you have built the project, we need to fulfil the Contract we have created using the platform specific elements, for example: **03.**

So from this Interop pattern we ensure that Unity and Windows know what they are doing, what data they control and at what time.

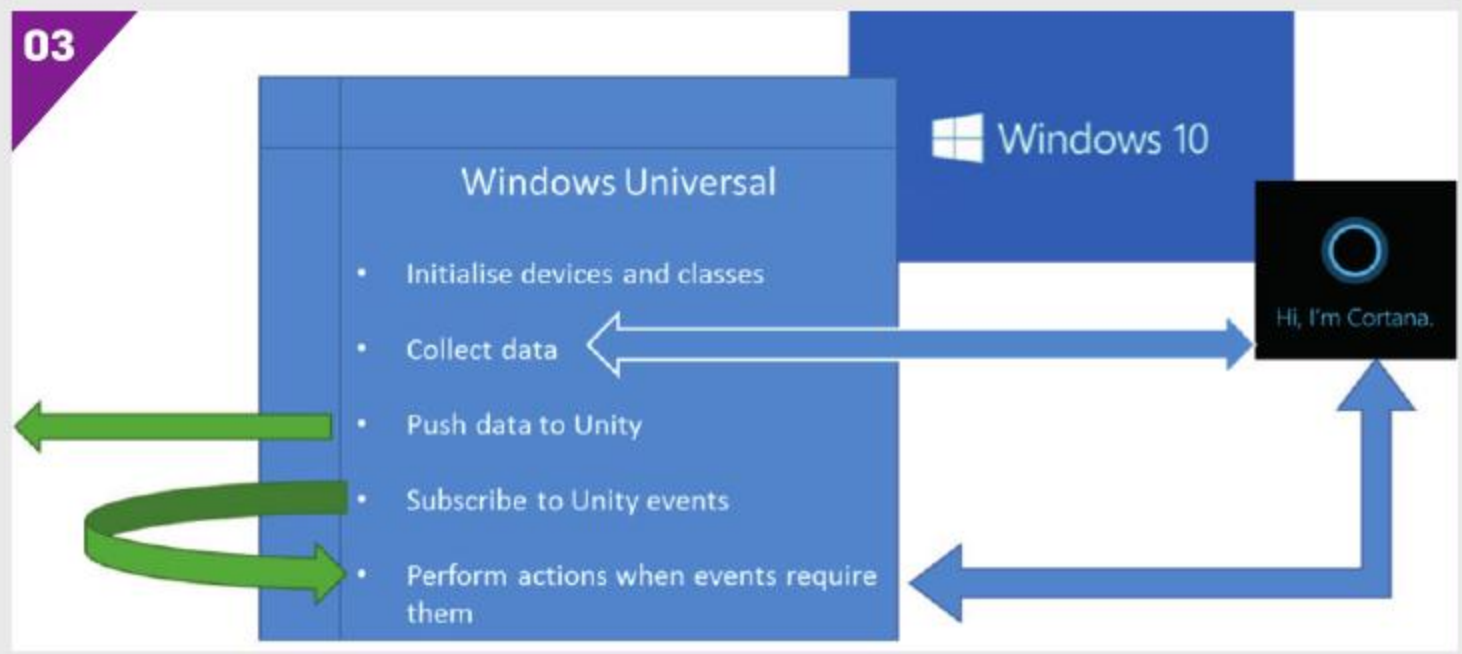
So let's jump in to some example code. The sample project accompanying this article was built using Unity 5.3 and can be found here: **wp.me/a3o0M2-2lG**

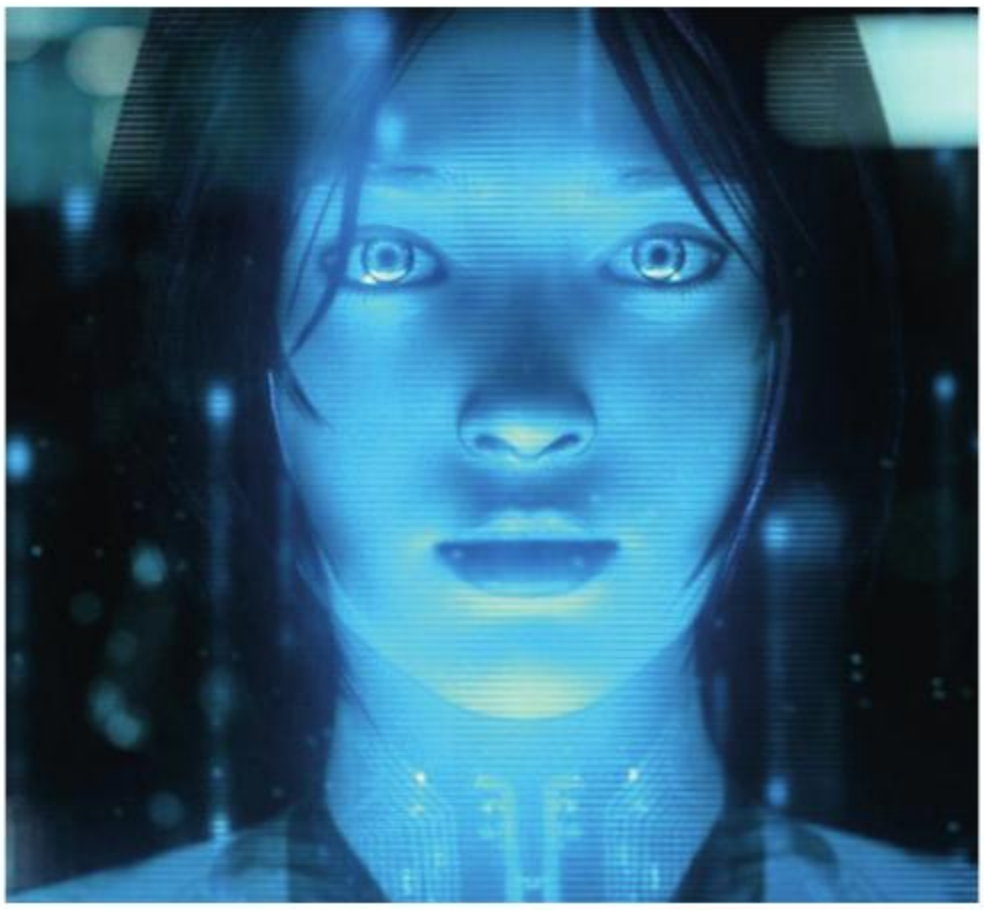
01

02



03





CREATE YOUR INTEROP CLASS

To get your Interop bridge up, you need to create it in Unity. To ensure it is also accessible from UWP it does need a few things as I'll show below:

1. In Unity, create a new C# script called "CortanaInterop" and replace its contents with the following:

```
1.  using System;
2.  using UnityEngine;
3.
4.  public class CortanaInterop : MonoBehaviour {
5.      public static string CortanaText;
6.  }
```

2. In this class we will add a static property. This property will be used to parse the text of the command that was used to launch the application in to your Unity project, as follows:

```
1.  public static string CortanaText;
```

You will notice that the string property is marked as 'static'. This ensures that it is the only instance of this property in use in your Unity project, plus it also allows the Windows project to locate it easily.

3. Build your project for the Windows Store platform and select the Windows 10 / XAML target. Note: selecting the XAML version is important as we need it to access the media components of the Windows 10 UWP platform.

4. Before you build the solution, you also need to enable a few capabilities for the project. Once you have configured your build target as above, click on "Player Settings" and then under the "Publishing Settings" section in the Capabilities area, check the InternetClient and Microphone capabilities. Now click build and off you go.

5. Once the project is built, open the exported project in Visual Studio so we can add the Cortana integration parts. For the integration to work, we need a set of code to handle the incoming commands, then we need to call that in the application's start-up methods.

THIS MONTH'S TUTOR

Name: Simon Jackson
Role: Most Valuable Professional (Microsoft)
Company: Zenith Studios

Bio: Microsoft evangelist and independent games developer, Simon 'Darkside' Jackson was among the first to build games with the firm's XNA and is currently part of the ID@Xbox

ADDING YOUR SPEECH?

For all of the Cortana speech examples, you will need an actual device to test on. The emulators don't have a microphone, so it can't actually listen. Microsoft also provides a quick start tutorial on speech integration, which you can find at the Microsoft UK developer website.

6. In the example project for this article, I simply put a new UI text control on the screen and bound the CortanaInterop.CortanaText field to the Text property of the Text Control.

We can also use these fancy speech recognition features while the game is running. This could be as simple as a dictation mode the player can use when submitting feedback, or it could be another way of the player interacting with the game, like commands to open doors, cast spells, etc.

It doesn't take much to enable this mode, so long as you stick to the Interop design patterns. For this we need to have an event / trigger in our Interop class to tell the device we want some speech recognized, then in the Windows project we simply hook to this event and kick off the speech recognition before then feeding the translated result back to Unity.

CREATING THE UNITY HOOK

7. First, open up Unity and edit the CortanaInterop class. Once open we need to add the following static event code, which is the interface action for our speech recognition:

```
1.  public static bool SpeechInProgress;
2.
3.  public static event EventHandler SpeechRequested;
4.
5.  public static void GetMeSomeVoice()
6.  {
7.  if (SpeechRequested != null && !SpeechInProgress)
8.  {
9.  SpeechRequested(null, null);
10. }
11. }
```

This simply creates an event hook (called SpeechRequested), so that when some code in Unity calls the GetMeSomeVoice method, it passes that request down to anyone listening for the event. If no one is listening we do nothing, because if you call an event without a subscriber, you will get a nasty error.

We have also added an additional property called SpeechInProgress because the speech recognition is an asynchronous process on the device and it can cause issues if you try to make multiple requests. To ensure you only ask once and cannot ask again until the last operation was complete, we have a flag.

8. Now build and export your project again before continuing.

INITIALISING SPEECH RECOGNITION

Switching over to the Windows project, the first thing you need to do is build it. This is simply because the Windows solution needs to compile the Interop code before it is made available in the OS project.

The first thing we need is a method to initialise the speech recognition system for the current language of the user's device.

9. Open up the SpeechHandler class and add the following property:

```
1.  private static Windows.Media.SpeechRecognition.SpeechRecognizer speechRecogn
    izer;
2.  private static IAsyncOperation<Windows.Media.SpeechRecognition.
3.              SpeechRecognitionResult>recognitionOperation;
```

10. Next add the following InitialiseSpeechRecognition method:

```
1.  public static async System.Threading.Tasks.Task InitialiseSpeechRecognition(
    )
2.  {
3.  // Create an instance of SpeechRecognizer.
4.  speechRecognizer = new Windows.Media.SpeechRecognition.SpeechRecognizer();
5.
6.  // Add a web search grammar to the recognizer.
7.  var dictationGrammar = new Windows.Media.SpeechRecognition.
8.  SpeechRecognitionTopicConstraint(
9.  Windows.Media.SpeechRecognition.SpeechRecognitionScenario.Dictation,
10. "dication");
11.
12.
13. speechRecognizer.Constraints.Add(dictationGrammar);
14.
15. // Compile the dictation grammar by default.
16. await speechRecognizer.CompileConstraintsAsync();
17. }
```

Here we create a new instance of the SpeechRecognizer and then define our default grammar (the operation mode for the speech recognition) and apply it to the recogniser.

For more information on the SpeechRecognizer, see the quick start guide from MSDN.

LETTING THE PLAYER GET A WORD IN

The next method is what will be used by the Unity Interop to perform speech collection and recognition, before sending the result back to the Unity Interop.

11. Add this new StartRecognisingmethod is as follows:

```
1.  public static async void StartRecognizing(object sender, EventArgs e)
2.  {
3.  CortanaInterop.SpeechInProgress = true;
4.
5.  // Start recognition.
6.  recognitionOperation = speechRecognizer.RecognizeAsync();
7.  Windows.Media.SpeechRecognition.SpeechRecognitionResult
8.  speechRecognitionResult = await recognitionOperation;
9.
10. if (speechRecognitionResult.Status ==
11. Windows.Media.SpeechRecognition.SpeechRecognitionResultStatus.Success)
12. {
13. // Do something with the recognition result.
14. CortanaInterop.CortanaText = speechRecognitionResult.Text;
15. }
16. else
17. {
18. CortanaInterop.CortanaText = "Sorry, could not hear you";
19.
20. }
21. CortanaInterop.SpeechInProgress = false;
22. }
```

Here we set the Interop SpeechInProgress flag to stop Unity from sending multiple requests, and then kick off Cortana in all her glory.

Then, provided the device isn't already speaking to the player, we set off the asynchronous call to Cortana to gather the player's speech, submitting it to the powerful cloud brain in the sky, then taking the final result and passing it back to Unity.

STITCHING EVERYTHING TOGETHER

Now that we have methods to do all the work, we just need to hook everything up.

12.
For the speech initialisation, we just need to add that to the App.xaml.cs "OnLaunched" method, just after the code to install the VCD file for the voice commands using:

```
1.  //Initialise Speech recognition
2.  await SpeechHelper.InitialiseSpeechRecognition();
```

13.
Next we need to bind our Unity Interop event to our new StartRecognizing method in the SpeechHelper class. To do this, we need to add it to the code for the XAML page that the Unity game actually runs on, and by default this is the page called MainPage.xaml.cs. Open this file and locate the constructor for the page which looks like this:

```
1.  public MainPage()
2.  {
3.  this.InitializeComponent();
```

To this method we need to add the following code (at the end of the method) to register our speech function to the Unity Interop event:
view plaincopy to clipboardprint?

```
1.  CortanaInterop.SpeechRequested += SpeechHelper.StartRecognizing;
```

With this, whenever a script in Unity calls the GetMeSomeVoice() method of the CortanaInterop class, it launches the event. This is picked up by the Windows platform, which in turn calls the StartRecognizing() function and kicks off speech. Now breathe!
It's just a simple change of events to jump from Unity to the device platform and back again.

You should also add some UI to tell the player the device is listening, or use the Platform UI by calling the speechRecognizer.RecognizeWithUIAsync(); function instead of the headless version, though it's up to you.

For the full code implementation of this article, check out the expanded post on the Microsoft UK Developers site. Additionally, the sample project that accompanies this post can be found here: ***wp.me/a3o0M2-2lG***

"I learned more about the game industry in two hours than in the last two years!"
- DEVGAME attendee

Screenshots from current DEVGAME team development projects

DEVGAME

The premier game development online course

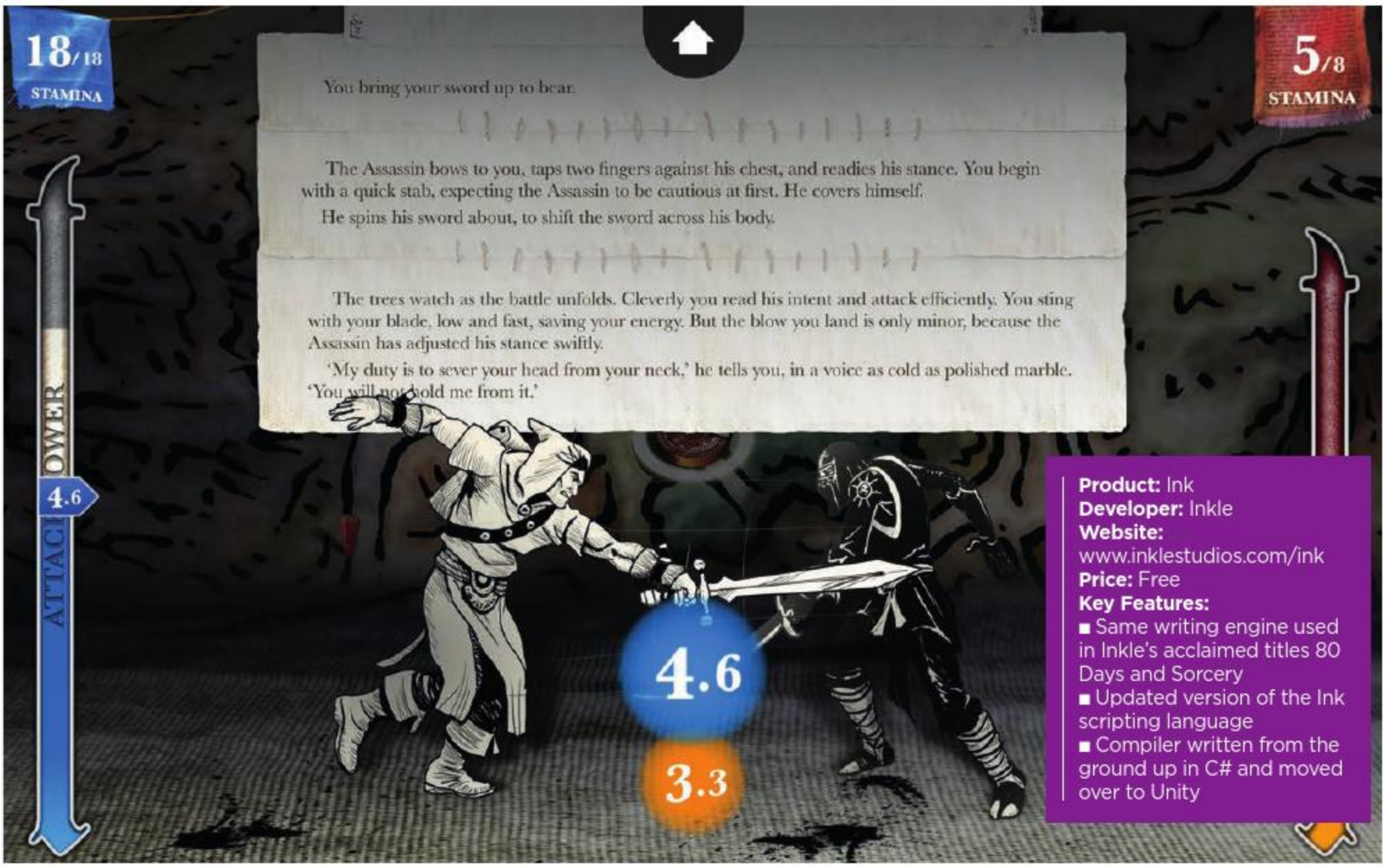
- 10 two-hour live and interactive sessions.
- Taught by platinum-selling game designer and former *Develop* design columnist.
- Experienced game industry guests.
- Team development projects.
- For more info, visit the course blog at *http://devgamecourse.blogspot.com*
- Only £150/$200 for the ten-week course.

devgame.alpenwolf.com

SCE INSTITUTE

AUTHORING TOOLS

Inkle, the interactive fiction specialists behind 80 Days and Sorcery, has released its text engine for free. Co-founder Joseph Humfrey tells **Will Freeman** what developers can expect from Ink


18/18
STAMINA
5/8
STAMINA
You bring your sword up to bear.
The Assassin bows to you, taps two fingers against his chest, and readies his stance. You begin with a quick stab, expecting the Assassin to be cautious at first. He covers himself.
He spins his sword about, to shift the sword across his body.
The trees watch as the battle unfolds. Cleverly you read his intent and attack efficiently. You sting with your blade, low and fast, saving your energy. But the blow you land is only minor, because the Assassin has adjusted his stance swiftly.
'My duty is to sever your head from your neck,' he tells you, in a voice as cold as polished marble. 'You will not hold me from it.'
4.6
3.3

Product: Ink
Developer: Inkle
Website: www.inklestudios.com/ink
Price: Free
Key Features:
- Same writing engine used in Inkle's acclaimed titles 80 Days and Sorcery
- Updated version of the Ink scripting language
- Compiler written from the ground up in C# and moved over to Unity

This is not the first time Inkle has shared the proprietary technology from your games, is it?

No. We do have a tiny bit of experience of attempting to be a service company. That wasn't planned, but it happened. We did Inkle Writer previously, which was our online system for writing interactive stories. It was designed for amateurs, and it was kind of designed as a tool that anyone could use so that they could get a taste for what it's like to write interactive stories.

Then the guys at Stoic who made used that tool for the first *Banner Saga*. And they're also using it for *Banner Saga 2*. We were trying to make a business opportunity out of Inkle Writer, and because Stoic did their Kickstarter and got a huge amount of funding for it, we managed to get a deal with them. But we realised soon after that this kind of thing wasn't really what we wanted to be doing. We became this company that had to support others, rather than just making our own games.

So we've had some experience in providing tools to other people, and even before Inkle Writer, right from day one, we'd been developing our own text engine internally.

So the Ink text engine grew from that offering?

That text engine has been the foundation or the bedrock of all our games so far, including *Sorcery* and *80 Days*. After *80 Days*, we decided to take a step back and really solidify that piece of technology. Up until that point it was kind of hacky and wasn't really designed to be released open-source.

Ink was really originally based on co-founder Jon Ingold's desire to write in a format that he found really comfortable. He had the advantage that he's primarily a games designer and writer, but he also has technical skills. He did a mathematics degree at Cambridge but he's not the best software engineer, so he built this compiler for the last version of the scripting language. He found it a dream to write in, and yet it wasn't really written in the best way for a wider audience. It was so hooked in to our own engine and workflow that it just wasn't something we could release into the wild.

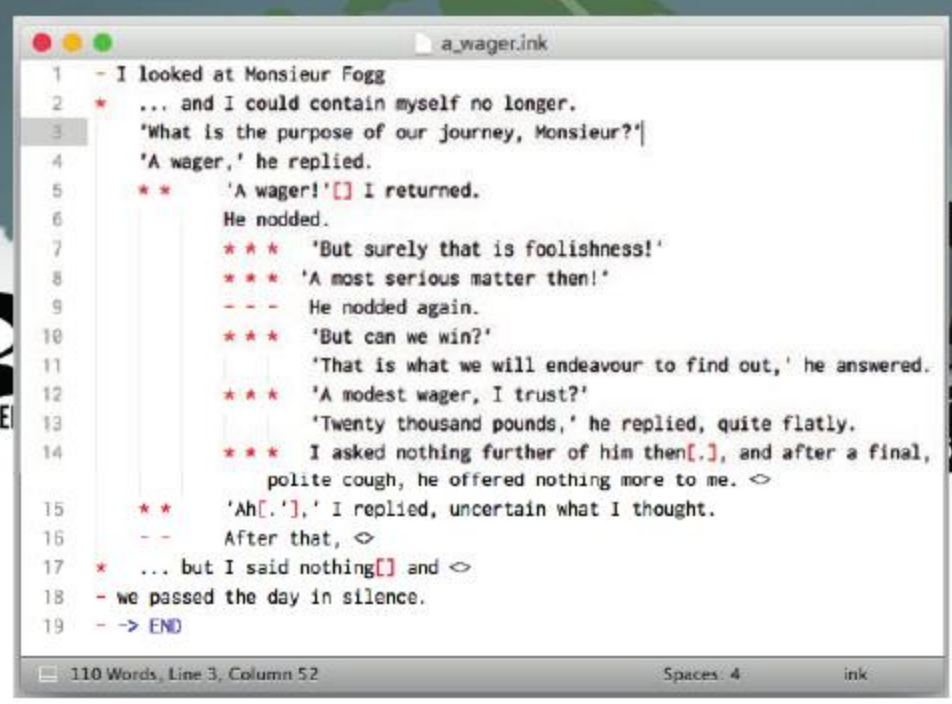
But you wanted to?

We did. We found it a little frustrating that we couldn't release it, really. The *Banner Saga* guys were out there using Inkle Writer, which we knew was so inherently limited. That was designed for little short experiments in writing, and hobbyist projects. It's still a great tool; Inkle Writer is primarily used by schools these days, and it's great for kids to learn about writing.

After *80 Days*, when we starting to talk abut our next project, and were starting to move towards Unity, we wanted to rebuild our own tool, and make it really streamlined, knowing the side effect could be that we got to release it to the wider world, and – we hope – there'd be interest in it, perhaps from a company like Stoic who would be using Unity. Of course, there are quite a few companies who use Unity.

It seems fair to say there's been a lot of interest.

The reaction to us going open-source on the Friday [before GDC] was absolutely phenomenal. There was way more interest than we expected. It was like we'd released a game.


a_wager.ink
- I looked at Monsieur Fogg
* ... and I could contain myself no longer.
'What is the purpose of our journey, Monsieur?'
'A wager,' he replied.
* * 'A wager!'[] I returned.
He nodded.
* * * 'But surely that is foolishness!'
* * * 'A most serious matter then!'
- - - He nodded again.
* * * 'But can we win?'
'That is what we will endeavour to find out,' he answered.
* * * 'A modest wager, I trust?'
'Twenty thousand pounds,' he replied, quite flatly.
* * * I asked nothing further of him then[.], and after a final, polite cough, he offered nothing more to me. <>
* * 'Ah[.'],' I replied, uncertain what I thought.
- - After that, <>
* ... but I said nothing[] and <>
- we passed the day in silence.
- -> END
110 Words, Line 3, Column 52
Spaces: 4
ink

How does Ink fit into a studio's pipeline and engine? Is it an isolated engine, something of a plug-in, strict middleware or something else entirely?

Ink is almost like a middleware. Most writing tools like Twine, Inform 7 – which is the old school original pure text IF tool – or even Inkle Writer are all designed as systems that go right from the writing through to the final result. They have a user interface paradigm which is consistent between every game made using that particular tool. They are all HTML, they all look roughly the same way, even if things can be re-skinned in various ways.

Ink, though, is the only solution that we can think of that was actually designed as a writing system from the ground up to be built into a wider game engine. So the presentation layer can look however a developer wants it to, whether that is a pure text-based game, or a completely visual game.

In fact, when we were redesigning the language and streamlining it, that's what we had in mind, because we're going towards graphical-based games in Unity. While *80 Days* was kind of text-based, and primarily a reading experience – even though it had graphics and it had that board game feel to it – the main reading sections, which were built using Ink, gives it all a text flow.

But for our next big project, we're going to go for a more visual look.

But why go the open-source route with Ink?

The one thing I guess we're not going to be able to do is spend a lot of time working on providing support. But that's part of why we went open-source; that although you can maintain the project, and help with the bug-fixes, a lot of the stuff that needs doing people can do for themselves.

So from a business point of view, we don't want to get side-tracked by this. We'll be maintaining it for our own uses, and fixing bugs and stuff.

But what is great about open-source is the collective effort. In less than a week other people had fixed bugs, and contributed to the documentation.

> Ink's open source release stems from Inkle's desire to share its ability to create narrative-driven games without devs relying too heavily on the team for support.

> **Ink is the only solution that was actually designed as a writing system from the ground up.**
> *Joseph Humfrey, Inkle*

That's all so exciting for us, because one of the more tangible effects of going open-source – and one that we were sort of hoping for – is that somebody would make a JavaScript version of the runtime engine, because although we have the C# version that goes into Unity, for our own testing purposes, it's useful to have a JavaScript framework so that we can create little prototypes using HTML and JavaScript. We've always done that in the past.

We've got people telling us they've got plans for adding a JavaScript port, so people can stories on the web.

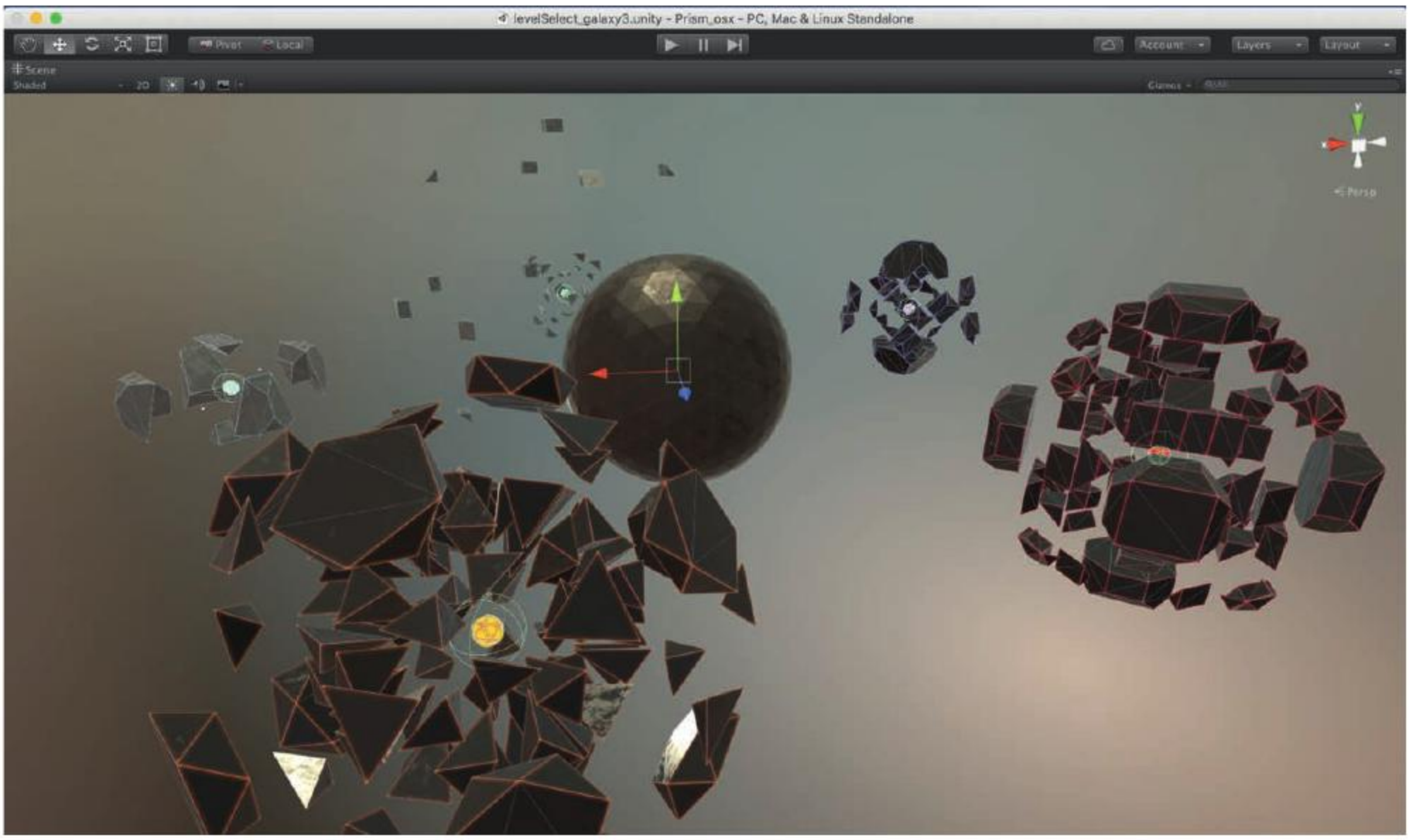
And with it being free, it's not a money-making project, directly at least?

No. We're not [making any money directly]. We really are just thinking from the Google point of view, or something like that. We believe there are lots of intangible benefits that come out of open-source.

And we don't even know what they might be, but we're already getting a taste or flavour of what might come out of this, whether it's porting to other platforms and such, or my own personal dream; that one day we'll hire a writer who has Ink experience on her CV. That would be amazing. The idea that we don't have to train someone up, and that they already know how to use our tools before they work with us? That would be just brilliant. ■

The develop Post-Mortem _PRISM

Former Hollywood VFX artist Clint Siu recently released his debut game: a geometric puzzle title for mobile devices. **James Batchelor** learns more about the project's unique origins



With the barrier to entry lower than ever, more people are exploring the possibilities of games development. One of the latest to take the plunge is Clint Siu, a visual effect artist with more than ten years of experience working on film, TV and music videos.

Siu had been keen to try something new for a while when he heard about Stugan, the Swedish games accelerator founded by veteran developers from Rovio, Mojang, EA, King and more. The key selling point for Stugan is that applicants spend two months making games in a cabin in the woods.

"It sounded amazing," Siu tells *Develop*. "I really wanted to apply but wasn't developing anything at that time, so I took a couple weeks to prototype lots of different things.

"Almost everything I threw out, except an idea of dragging a UI box and twisting it with my fingers. It felt like *Minority Report* when Tom Cruise is moving around little windows on that giant transparent screen. That was fun to me.

"I expanded on that initial concept by having geometry act as a base holding the UI elements and having a camera that can move freely around the 3D scene. I sent that as my application video to Stugan, and I guess they liked it enough to accept me in."

The idea would eventually evolve into *Prism*, a surreal puzzle game about "exploring a microcosmic galaxy and unfolding sacred geometry", according to Siu. Put simply, players drag and rotate coloured dots and lines to match the symbols on geometric shapes, thus solving each puzzle.

And Siu's inspiration is far more classical than you might think: "It came from Plato's classical elements in Timaeus. He associated each of the five elements – fire, earth, air, water, ether – with a Platonic solid: geometry that has the same polygon on all sides. I thought about how geometry is what we use to measure the world, but what do we use to measure the soul? That question led to the essence of what's inside *Prism*."

LOOKING FOR UNITY

The title is built using Unity, a game engine for which Siu has since become a big fan. The transition from his usual toolset of digital content creation software such as Autodesk's Maya was relatively easy, with a lot of the hotkeys and navigation tricks the same across both Maya and Unity.

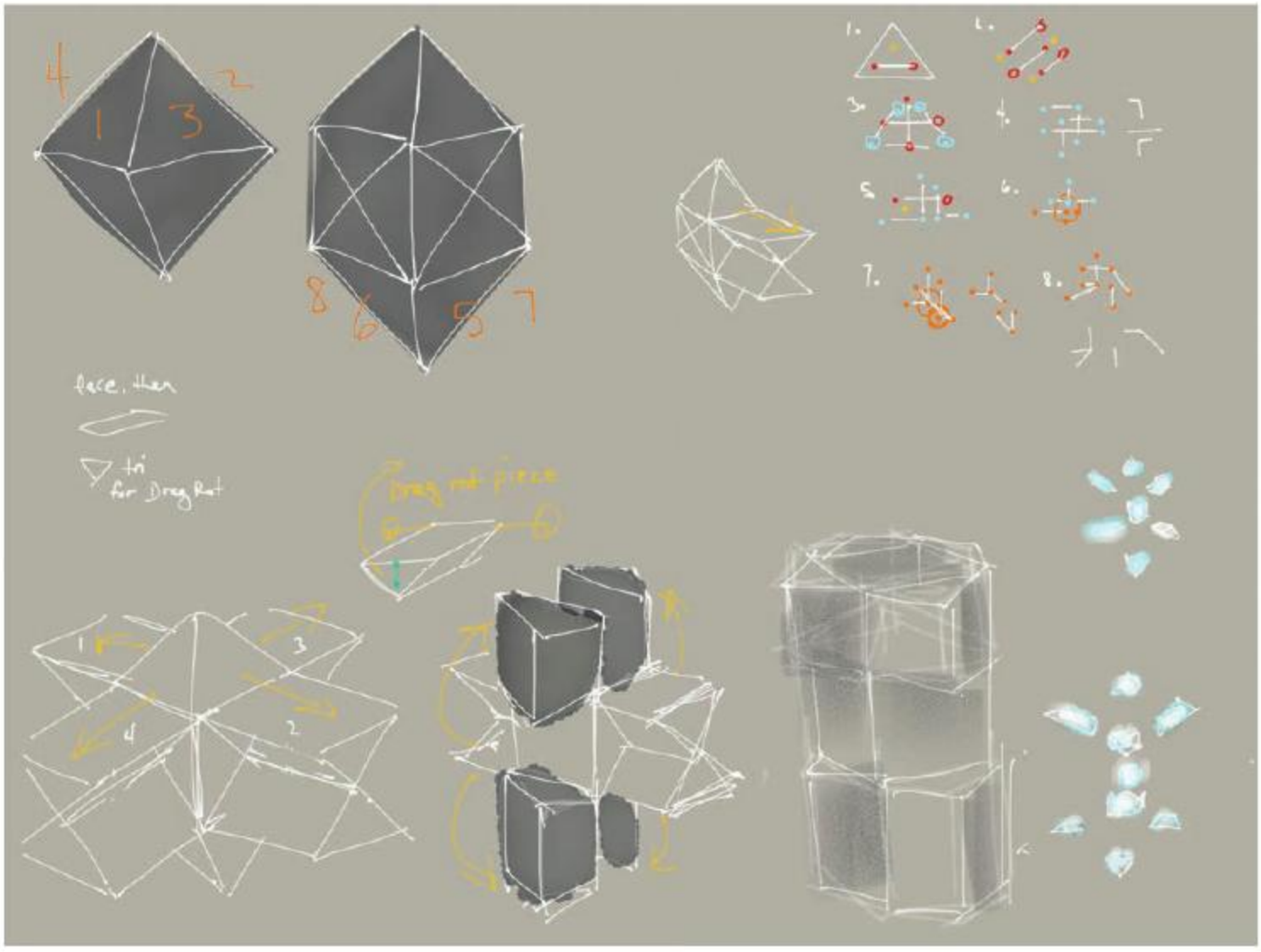
The biggest obstacle was programming and Siu's limited knowledge of C#.

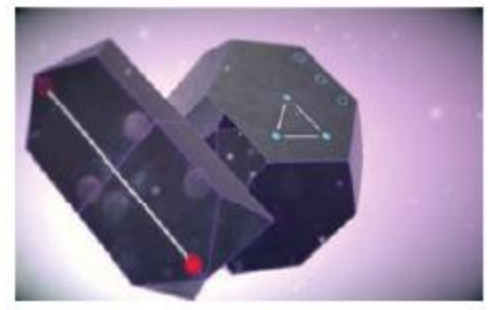
"I had taken a 10-week class on scripting for [Maya scripting language] MEL a few years back that taught me the basics of programming," he explains. "It was enough to actually start coding my own games. But the syntax is quite different than C#, so it became a lot of going back and forth from the Unity docs and Googling for code examples.

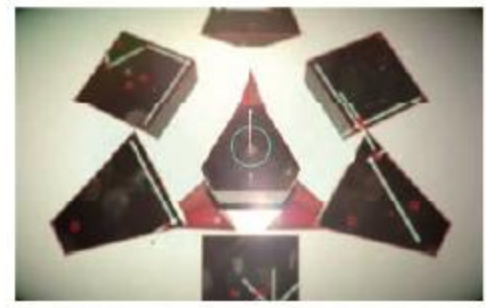
"Of course, Unity also has an asset store that I'm grateful for. Nine times out of ten, there'd be something really difficult for me to program that already had a package available on the store."

Siu's background as a visual effects artist for Hollywood also helped inspire the game's visual style, with the developer naming J.J. Abrams movies such as *Super 8* and *Star Trek* as references. He also looked closely at the work of artists like GMunk.

"I really wanted a game that felt cinematic, but it also had to be something that I could finish as a one person team," he says. "I gave myself the constraint of only using a few pieces of simple geometry as the main







focal point. Secret Exit did that with *Zen Bound* and *Zen Bound 2* with incredible results, so I knew it was possible. The thing that makes it visually interesting is the way light reacts to the object."

A RELAXED SOUNDSCAPE

Lighting played a major role in giving *Prism* the cinematic sheen Siu was hoping for. While many mobile games are devoid of dynamic lighting, he required at least one such light to create glistening highlights on the faces of his various geometric shapes.

"The way light starts on one edge, rolls and flicks along the surface, and gets cut off at another edge has a magical quality that I wanted to capture," he explains. "The way specularity varies on a surface is something that isn't used as often in mobile games as it is in film.

"In the real world, surfaces have imperfections, grooves, smudges or fingerprints that break up the light. If something is smooth and shiny, it creates a brighter highlight. If something is rough and dull, it creates little to no highlight. With Unity's standard shader, I used a gloss map to define a surface's glossiness to achieve a similar effect.

"Lens flares, chromatic aberration and depth of field are effects used a lot in CG and motion graphics, and they are a big part of *Prism's* visual style as well. These are all optical effects that suggest the image is produced from a camera with a lens. They help film CG renders to composite and integrate better with footage.

"The same thing can apply to games, helping it feel more photographic. To achieve this, I used Unity's Vignetting and Chromatic Aberration image effect from their standard assets. For the lens flares, I used Proflares from the asset store."

> **Lens flares, chromatic aberration and depth of field are a big part of *Prism's* visual style.**
> *Clint Siu*

The music and audio was also important, with Siu aiming for a "relaxed, meditative" soundscape that would put players at ease. Given *Prism's* futuristic look, he chose to experiment with synthesizers as the most appropriate instrument. Using the copy of Garageband already installed on his Macbook, Siu chose some of the synth presets and began tweaking parameter knobs until he found a sound he liked. To add to the 'spacey' feeling, he used a lot of reverb.

"Garageband has a neat remote app that lets you use an iPad as a virtual keyboard/midi controller," Siu says. "Which is great because I could visualize keys and actually play chords instead of having to pencil in all the midi notes by hand."

VOODOO MAGIC

Last, but by no means least, there is the control scheme. Touchscreen controls are one of the biggest factors that attracted Siu to games development in the first place, and with *Prism* he was finally able to explore this.

"It's so incredible that I could touch an object on a screen and make it move simply by moving my finger – that's voodoo magic to me," he says. "I wanted it to be like that in *Prism* as well. I wanted the controls to feel very natural and intuitive, so intuitive that small children could just figure out what to do without instruction.

"This was also the biggest challenge. I didn't want to put an explicit tutorial or words in the game because that would break some of the zen, meditative feeling. So how do you tell a child what to do without telling them what to do?"

In the end, he spent a lot of time going back and forth between user testing and redesigning the first handful of levels. Over time, these stages essentially became an unofficial tutorial, gradually easing players into understanding what can be interacted with and in what ways.

"The biggest lesson I learned was to build a system or framework that can be easily changed," Siu says, looking back on his first games development experience. "Because things will definitely change. Next time, I'll figure out better ways to put repetitive or error prone things into code. It's really tedious having to drag and drop things by hand. Time for me to learn more programming skills." ■

STAR POWERED

With just a pair of games under its belt, Disruptor Beam has already worked with two of pop culture's biggest brands. CEO **Jon Radoff** discusses moving from Game of Thrones to Star Trek, the benefit of building around verbs and boldly going where no mobile dev has gone before

On paper, *Star Trek* and *Game of Thrones* are worlds apart. They both represent 'geek' culture breaking into mainstream popularity, but the futuristic ruminations of the Enterprise and its crew is a lightyear away from George RR Martin's sex-and-swords political fantasy.

"There's one point of similarity," retorts Disruptor Beam CEO Jon Radoff, "which is that both shows touch on violence in various ways.

"But in neither case are either of those stories about the violence, per se."

Radoff's studio Disruptor Beam made its name with *Game of Thrones* spin-off *Ascent* in 2013, followed by *Star Trek: Timelines* this year. Both releases share thematic DNA, but their origins are distinctly separate.

"Sometimes in companies they start with the game system and then they try to back that system into the IP," Radoff recalls. "We start with the IP and say: 'What are the things that players are going to want to do in this world?' Then we build up a system from those verbs, as opposed to the other way around."

DIVIDE AND CONQUER

Ascent launched as a 2D browser game, before moving to iOS and Android, while *Timelines* came straight to mobile.

"People were already interacting with games built around this kind of IP through multiple screens," Radoff observes. "We had the view that to build a really great game that engages people in the same places where they're already interacting, we would have to be on multiple devices."

Disruptor Beam created *Ascent*'s iOS and Android versions as proprietary clients – a decision Radoff describes as "frankly something we never want to repeat again".

"I wouldn't point to either of those porting efforts as shining examples of how anyone should do it today," he admits.

"Unity isn't the only game in town in terms of being able to do this, but it does a good job of making it possible to target multiple devices and have a uniform experience across those."

The studio has worked to scale Unity up to its team of 20-plus devs – but Radoff accepts that mobile should've been considered from the start.

"When you start small and then add the increments to grow your business, you tend to make decisions that get you right to that next milestone, but you don't always make the broad architectural decisions that you might make if you knew upfront a lot more information about your market," he reveals.

"The difference with *Star Trek* is we went into it with a lot more knowledge about how big the product would be on multiple screens, so we knew that had to be a requirement from day one, rather than something that we incrementally delivered."

> **We ask: 'What are the things that players are going to want to do?' Then we build up a game system from those verbs.**
> *Jon Radoff, Disruptor Beam*

DEEP SPACE

Timelines combines *Ascent*'s 2D menu-driven management with inter-ship combat rendered in 3D.

"We wanted to authentically and gorgeously portray all the things you would see out the window of a starship," recalls Radoff. "The ability for ships to battle each other was really an extension of that."

Yet, through the hail of pulsing lasers and monolithic cruisers in 3D, Disruptor Beam remained true to *Star Trek*'s core.

"The character-driven elements were a little more challenging with *Star Trek* because the stories are so sophisticated and they tend to not always orientate around violence," Radoff muses.

"Our game system sort of combines Choose Your Own Adventure aspects with RPG mechanics. Some people have compared it to fantasy football with phasers." ■

STAR TREK TIMELINES
Developer: Disruptor Beam
Platform: iOS, Android
www.disruptorbeam.com/games/star-trek-timelines

HEARD ABOUT

GAME AUDIO ON THE GO

Tazman-Audio founder Anastasios Brakis and Monument Valley sound designer Stafford Bawler offer **John Broomhall** their best audio advice and examples of auditory excellence for mobile developers

Deus Ex: The Fall is just one of the many mobile titles that makes the most of its smart device home to output console-quality audio

There are already many yardsticks for audio quality in the mobile sector. Develop Award-winning sound designer Stafford Bawler, and founder of middleware maker Tazman-Audio Anastasios Brakis, cite multiple examples such as *Deus Ex: The Fall*, *Star Wars: Uprising*, *Sword & Sworcery EP*, *The Banner Saga* and UsTwo's *Monument Valley* and VR offering *Land's End* – all of which variously exhibit creative and technical audio prowess.

"With careful planning and design, it's possible to create games that can give last-gen consoles a run for their money," says Bawler. "The best mobile games are ones that embrace the limitations of the format, and audio is an extension of that – it must take account of the listening environment, the hardware and the UI."

Brakis adds: "Mobile devices are more than capable of mixing large numbers of compressed/uncompressed audio sources simultaneously and routing to audio busses for DSP effects like ducking, reverb, filters and compressors. That said, you shouldn't constantly hammer the CPU – you have to consider battery life. You need to constantly profile audio performance throughout development and keep to agreed limits. Depending on game type, you could easily have the same or bigger audio pool size compared with last-gen consoles.

"Meanwhile, for VR, HRTF-based algorithms for binaural audio are now possible. Audio middleware engines provide various solutions – virtualisation, prioritisation, as well as randomisation and modulation on properties such as volume and pitch – that help introduce variation with relatively small audio asset footprint."

MUSIC MAESTRO

So what should mobile game developers starting a new project be thinking about, audio-wise?

"Aim high", advises Bawler, "but also figure out how you can use format limitations to your advantage. Look backwards – many skills and techniques developed through more hardware-restricted console days are more relevant than ever for mobile. Integrate audio deeply and effectively, so sound is not only an enjoyable part of the experience, but also an integral one."

> **Techniques developed through hardware-restricted console days are more relevant than ever for mobile.**
> *Stafford Bawler*

Brakis agrees, adding: "Unless you have a dedicated audio programmer, invest into an audio middleware solution. It will save you time and your middleware-savvy freelance sound designers will be able to engineer the best audio experiences.

"Allocate enough CPU and memory usage from the get-go. Putting some stakes in the ground will greatly help your sound designer and avoid nasty surprises as you'll have shared expectations on how much CPU and memory audio can have. Oh, and use data compression as much as possible."

According to Bawler, communication is king: "Start a dialogue with your sound designer as early as possible – and keep on talking. If you're not sure what you want, think about and refer to games you've enjoyed playing from an audio/music standpoint – or even games that made you turn the sound off. Why was that? What do you want to avoid?

"Allow time for iteration and feedback, as well as tweak-time between your beta, soft launch and final release. Whilst it's good practice to integrate music and sound from the beginning of the process onwards, sometimes that final polish by your sound designer just isn't possible until all final systems are in place."

TURN IT UP

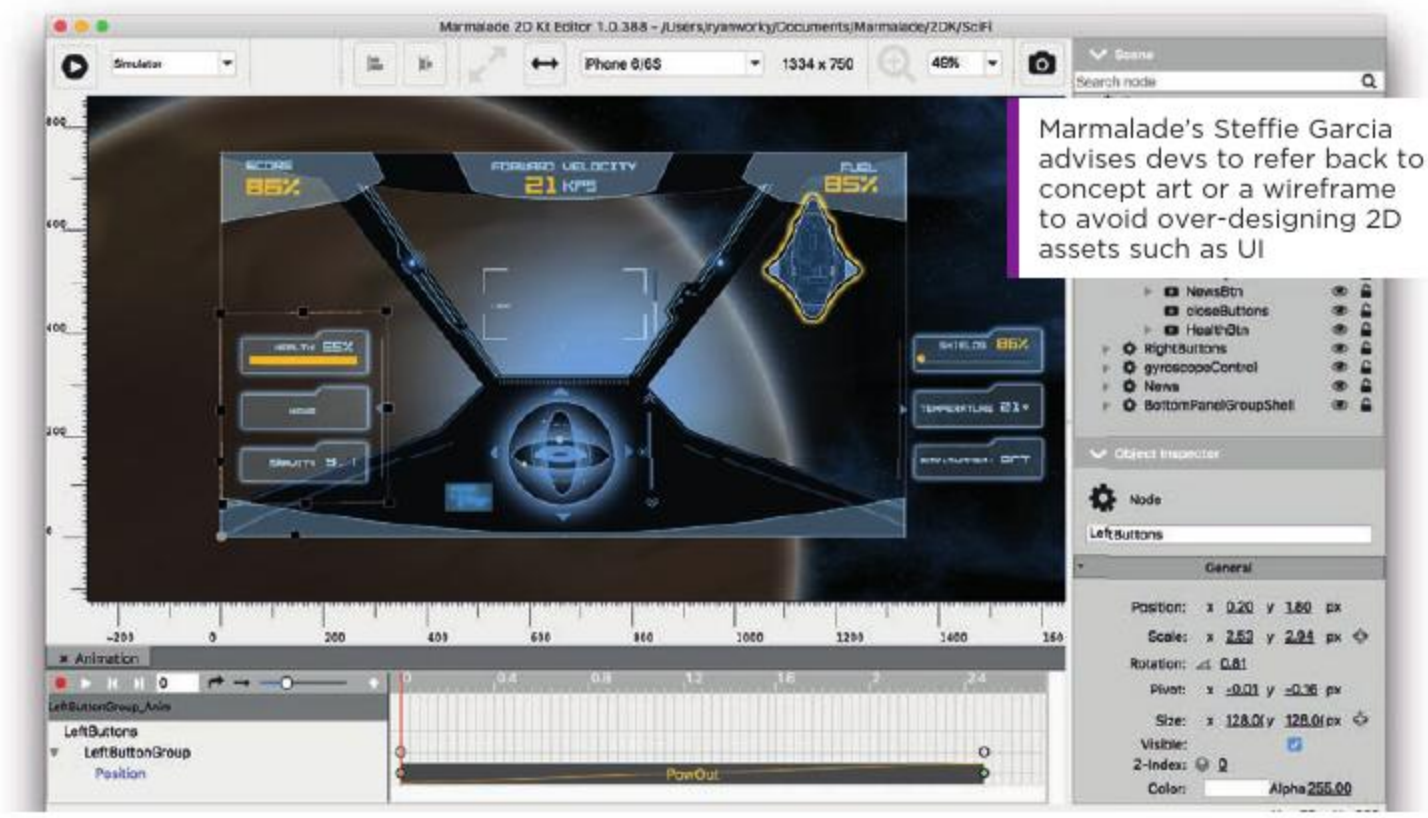
But in the end, don't most people play with the sound off? Not according to Brakis, who claims developer analytics – including players' audio settings such as use of headphones or volume levels – reveal quite the opposite. Bawler points out there simply wouldn't be so much high quality mobile game audio content if no-one felt it was worthwhile.

"The fact that there are mobile games winning music/audio awards – and having both online and physical soundtrack releases – demonstrates that a lot of people out there are appreciating the audio in mobile titles." ■

John Broomhall is a game audio specialist creating and directing music, sound and dialogue
www.johnbroomhall.co.uk

A DIFFERENT DIMENSION

Marmalade's Steffie Garcia, Daniel Hall and Matthew Teague explain why building in 3D shouldn't mean devs forget about creating 2D content, and offer their tips for making the most of your assets



Marmalade's Steffie Garcia advises devs to refer back to concept art or a wireframe to avoid over-designing 2D assets such as UI

What 2D content in 3D development get overlooked most often?

Steffie Garcia, UI Artist, Marmalade Game Studio: Concerning the UI, I'd say it's the optimisation and general housekeeping of your project files. It tends to get left until the end of development, when there are a lot of assets in the game and they become hard to keep track of.

Why are these important?

Garcia: Optimising your UI assets makes a huge difference to how well a game runs. If you have a badly optimised game, for example with lots of very large textures, it can cause the game to run slowly or crash.

Optimising can take place in many different ways, such as making your texture a power of two, or using a nine-sliced texture stretched in place of a large single texture.

Matthew Teague, Designer, Marmalade: Designing and implementing a fluid and visually appealing UI is extremely important for making a game stand out from the crowd.

A quality UI helps convey the sense of polish within a game. The more triple-A your game's UI can look, the better chance it has of being featured on the app store.

How does Marmalade Platform help developers create 2D content for 3D mobile games?

Daniel Hall, Technical Marketing Manager, Marmalade: As part of Marmalade 2D Kit, we provide an editor that allows content creators to iterate fast and often. The editor exports an open and easily parsed file format.

We also provide a lightweight runtime playback component that easily integrates into any existing engine that ensures high performance playback and easy integration.

What skills/experience do devs need to produce good 2D assets?

Garcia: Apart from the obvious artistry skills, such as an understanding of lighting, colour and form, there is the ability to consider the size that you will see the assets.

> **The more triple-A your game's UI can look, the better chance it has of being featured on the app store.**
> *Matthew Teague, Marmalade*

For example, if you are creating icons for a mobile game, you mustn't make them too detailed, as they will look busy and hard to read when seen on a small screen.

It is good to also use vectors where you can when creating the assets, as they won't lose quality if you need to scale them up at a later date.

How do you avoid over-designing 2D assets that distract or get in the way of the 3D gameplay?

Garcia: Before any assets are created, you should generally have a wireframe version of the UI for your game. To avoid creating distracting UI that doesn't mesh with the game, I would use a screenshot of the existing game or some concept art. Then I would design on top of the screenshot, taking note of the shading, colours and gameplay area, as well as making use of the wireframe to make sure the size and positions are correct.

It's also important to consider the different aspect ratios your UI will be viewed at. A 16:9 device has considerably more height than an iPad and you must design and implement a screen that works with both. The solution doesn't always have to be 'one size fits all', with elements sitting inside an iPad-safe area on a 16:9 screen.

Teague: Wireframing user interfaces and how each screen flows together is important as it can help a developer recognise pitfalls in their UI design.

Which of your customers' mobile titles is a good example of how this has been done well?

Hall: *SimCity BuildIt* developer Track Twenty has done a fantastic job of combining a polished, exciting 2D UI with 3D visuals in its game.

The as-yet-unreleased latest title from our own Game Studio has used 2D Kit exclusively for 2D UI. ■

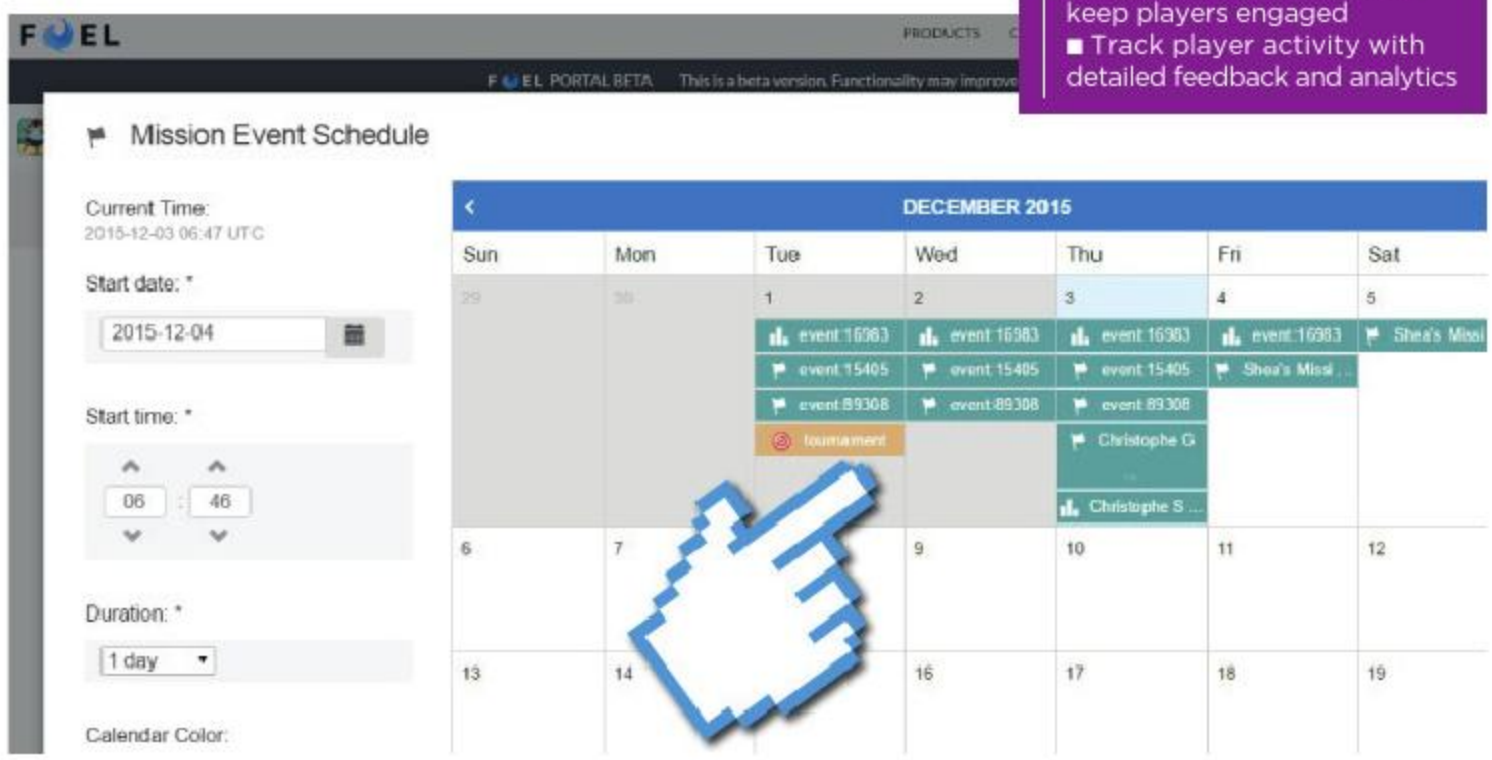
WHY MARMALADE MATTERS
While other market offerings are expensive, difficult to use and limited in flexibility, Marmalade features support for 2D content out of the box. 2D Kit is purpose-built to cater for 2D content, unlike Unity or Unreal Engine where 2D content is essentially retrofitted to a 3D engine. 2D Kit is completely open and flexible, meaning devs can use it with other tool platforms if they want.
www.madewithmarmalade.com

TOOLS SPOTLIGHT

FUEL IGNITE

Product: Fuel Ignite
Developer: Fuel Powered
Website: fuelpowered.com/products/ignite
Price: On application
Key features:
- Create and manage live events without the need for multiple store submissions
- Tweak parameters on-the-fly with instant updates to keep players engaged
- Track player activity with detailed feedback and analytics

QA lead Nick Halme runs us through the latest addition to Fuel Powered's eponymous platform for mobile developers: the Ignite live events engine



"Our big push with Fuel Ignite was to build a system for live events creation and management that leveled the playing field between small devs and big ones, who have already invested in proprietary live events operations systems," Fuel Powered QA lead Nick Halme says of the company's new addition to its self-titled platform.

Ignite joins Fuel's existing offering of asynchronous multiplayer system Compete and real-time data editing service Dynamics. The modules can be enabled in any combination that benefits developers.

While Ignite has only just launched, *Alphabear* studio Spry Fox is integrating it into its strategy puzzler *Triple Town*, alongside its existing use of Compete to run timed multiplayer competitions.

"Ignite has just moved out of beta and gone live, so in that sense it's really all new, and we've been doing a lot of polishing," Halme says. "That said, we've been working on some neat interactions between Ignite and Dynamics. You can think of Dynamics as a bunch of data or game variables you define, which resides online and affects your game in specific ways. For instance, you can take the basic Ignite idea of segmenting your audience into cohorts to some very cool places by using Ignite-specific variables with your Dynamics data.

"An example of this would be trying to anticipate who your big spenders are, and what they do most often. It's impossible to do anything but guess at this when you launch your game. With Ignite you can expose those basic variables in your game to Ignite from the start.

> **Ignite levels the playing field between small devs and big ones who have already invested in proprietary live events operations systems.**
> *Nick Halme, Fuel Powered*

"Count the basic actions taken in your game (i.e. jumping or laps taken) and establish a variable that tracks currency. Then, with the power of hindsight and Dynamics, you can collect that data and cohort your audience into groups based on a combination of how active they are and how much they spend. In turn, you can target custom mission content at those groups you have established – something more appetising for people who play a lot but spend little, vice versa or in-between. In this case, you didn't have to predict how people would play your game, but could essentially rearrange those building blocks after the fact."

NO NEED TO WAIT

Ignite allows devs to create and manage live events without the need to submit multiple applications to a store. They can also tweak the events on the fly to keep players engaged, basing their changes on feedback and analytics.

"It's not just an API to play around with, but includes a web portal to handle the operations side of things," Halme details. "Once an engineer has integrated the code and design has chosen a number of variables to expose and hook up, the person operating it all can get creative and generate a large combination of event types out of those building blocks. This is why we call it a 'live events engine' – it's really a lot more than some code that's ready to go.

"Another big thing is that any editing done with Ignite transmits instantly to player devices. Here's an example: you've set up daily quests which require players to collect X number of coins within an hour, rewarding them with a virtual good on completion. The next day you examine your analytics to see how things are going, and already you can see that very few virtual goods were claimed – indicating it might be too difficult for the average user to complete the quest. The developer can go in and edit the upcoming or current live event and extend the time or reduce the number of coins required, and it happens now; engineers don't need to get involved, and nobody needs to push an emergency build out to the storefronts."

Creators can manage their game events through Fuel's Portal platform, accessing parameters and modifying events in real-time.

"Ignite is live, but it will continue to change and improve," Halme says of the future for the service. "A lot of those major future changes are based on customer feedback – we'd rather see what actual developers need, rather than guess and force people into some behaviour or other." ■

ASK AMIQUS

Q Dear Amiqus, I want to ask my boss about available training to advance my skillset, but don't want to sound like I am incompetent. What should I do?

This is a great question and particularly relevant to the ever-changing games industry. A good place to start is to think about why is it you want training and what are you hoping to achieve? Will the training help you with your current job, or are you thinking of where you'd like to be in your future career? The answer to this question will help you to choose the training you need to achieve your goal.

The first taste of training for people entering the industry is typically through education. Once in a job, keeping skills up-to-date is a constant challenge in the tech-enabled world of games.

If you find you are struggling to do elements of your role as effectively as you would like due to a lack of training then it's vital to flag these with your boss. Seeking training to do the job you're in does not mean you are incompetent; you just want to be the best you can be and need more input to get there. Employers expect to invest in their teams and typically encourage learning.

When you do sit down with your boss the key to your conversation is to focus not only on how training will benefit you but how it will benefit the business. Provided your personal goals are aligned with the studios, employers are likely to view a training request positively. It shows commitment to self-improvement and developing skills – and all employers want great people in their team.

> **Keeping skills up to date is a constant challenge.**
> *Liz Prince*

A good rule of thumb in any situation is not to go to your boss with a set of problems; do some research and provide some thoughts on what's out there, at different cost levels. There are several online tutorial options such as Digital Tutors, CG Cookie and 3D Buzz available as modular options. These can be tailored specifically and are more affordable in terms of time and money than off-site training. It is worth bearing in mind that any creative skills you acquire through training will always need to be demonstrable in your portfolio.

If you are asking your employer to pick up the tab, it's fair for a studio to see return on the investment. One way to explore this is to invite some feedback from your team or manager about areas of your performance that could be improved. For longer term benefit, there needs to be a level of commitment from you to capture, digest and implement what you have learned. It's important to put your energy in to getting the most out of what you learn for as long as you can. Think about what impact it will have on you or your team's performance.

If you already have the skills to do your job, you may feel that you would benefit from a more holistic learning experience. Perhaps you are looking to become a more effective people-manager or you would like to improve your organisational skills. Many people look to training for overall enhancement, learning a new approach rather than a hard skill. Some of the more formal training certifications such as SCRUM mastery is also in line with development working practices.

Learning comes in many forms and games professionals often benefit from events and conferences where speakers offer new ideas and share their own experiences and the capabilities of emerging tech. This can be a truly valuable source of inspiration and ideas to take back to your own studio as well as providing a networking opportunity to continually learn from other like-minded experts in the industry. ■

Liz Prince is business manager at Amiqus. Every month, she helps solve some of the trickier problems job seekers currently face in the games industry

amiqus Visit **amiqus.com** for a fresh perspective on games recruitment

develop

CIRCULATION IS OVER 9,500

Editorial: 01992 515 303
Advertising: 0207 354 6000
Web: www.develop-online.net

Subscription UK: £35 Europe: £50 Rest of World: £70

Enquiries, please email: dev.subscriptions@c-cms.com Tel: 01580 883 848

Charges cover 11 issues and 1st class postage or airmail dispatch for overseas subscribers

Develop is published 11 times a year, reaching 9,500 readers throughout the UK and international market

NewBay Media is a member of the Periodical Publishers Associations

© NewBay Media 2016 All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means electronic or mechanical, including photocopying, recording or any information storage or retrieval system without the express prior written consent of the publisher. The contents of Develop are subject to reproduction in information storage and retrieval systems. Printed by Pensord, Tram Road, Pontllanfraith, NP12 2YHA

SAME SUMO
NEW IDENTITY

Sheffield, UK Nottingham, UK
Pune, India

www.sumo-digital.com

facebook.com/SumoDigital @SumoDigitalLtd

linkedin.com/company/sumo-digital

SUMO DIGITAL

13 YEARS
50+ GAMES
GENRE DEFINING TITLES
MULTIPLE AWARD WINNING STUDIO